

2011

# Epidemiological Profile for Iowa

HIV, AIDS,  
Sexually Transmitted Diseases,  
and  
Viral Hepatitis

## Acknowledgments

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## EXECUTIVE SUMMARY

### EPIDEMIOLOGY OF HIV, AIDS, AND STDs IN IOWA

HIV diagnoses for the 10 years, 2002 through 2011, averaged 111 diagnoses annually with a peak of 126 in 2009, followed by a drop to 120 in 2011. Males have accounted for over 80% of HIV diagnoses since 2006. Sex with another male is the reported mode of exposure to HIV for 60% of males. By far the greatest numbers of diagnoses occur among persons 25 to 44 years of age. However, diagnoses among persons 13 through 24 years of age have been on the rise since 2007.

Black, non-Hispanic males, black, non-Hispanic females, and Hispanic males are over-represented among persons with HIV/AIDS when their population sizes are taken into account. Black, non-Hispanic males have HIV diagnosis rates more than eight times higher than white, non-Hispanic males. Hispanic males have rates over three times that of white, non-Hispanic males. Black, non-Hispanic females have the highest diagnosis rate among females, 18 times that of white, non-Hispanic females.

Diagnoses of AIDS peaked in 1992, coinciding with expansion of the Centers for Disease Control and Prevention (CDC) definition of AIDS to include CD4+ cell counts less than 200 cells per milliliter or less than 14% of total lymphocytes. The introduction of highly active antiretroviral therapy (HAART) sparked a dramatic decline in AIDS diagnoses from 1995 through 1998. After reaching a low in 1998, the number of Iowa AIDS diagnoses increased to an annual average of 75 diagnoses from 2002 through 2011.

From 2002 through 2007 the state made steady progress in getting people diagnosed early in the course of the infection. The percentage of persons diagnosed with HIV that received an AIDS diagnosis within a year of HIV diagnosis (“late testers”) dropped from 59% in 2002 to 37% in 2007. However, from its nadir in 2007, the proportion of late testers began to climb again, reaching 47% in 2010.

There were 21 deaths from all causes among Iowans with HIV/AIDS in 2010, the last year for which death ascertainment is complete. This was a sharp decline from 34 in 2007 and substantially less than the average of 29.3 for the 10 years, 2000 through 2009. Nineteen deaths have been reported so far for 2011. Death ascertainment for 2011 is incomplete pending linkage to state and national death registries.

The most significant feature of Iowa’s HIV epidemic is the continual increase in the number of persons living with HIV and AIDS. Steady diagnoses of HIV infection, combined with widespread use of highly active, antiretroviral therapies that have delayed the onset of AIDS and decreased the number of deaths among persons with HIV/AIDS, have increased the number of persons living with HIV disease to unprecedented levels and have taxed limited resources for care and treatment. As of December 31, 2011, there were 1,939 Iowans reported to be living with HIV or AIDS. Another 509 were estimated to be infected but not diagnosed, bringing the estimated number of infected persons to 2,448. There were 64 persons known to be living with HIV or AIDS per 100,000 population as of December 31, 2011, an increase of 10.7 persons per

100,000 since December 31, 2008. While the ten most populous counties (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury) account for 49% of the total population of Iowa, 74% of persons living with HIV/AIDS were diagnosed as residents of those counties. Polk, Scott, Johnson, Pottawattamie, Woodbury and Black Hawk counties all have prevalence above the state average.

Other points of interest include:

- There has been a gradual trend toward a more urban distribution of HIV infection and other STDs in Iowa. Over 78% of persons diagnosed with HIV between 2009 and 2011 were residents of one of Iowa's ten most populous counties at time of initial diagnosis. These counties contain 49% of Iowa's general population, but over two-thirds of new chlamydial infections and over 80% of new gonorrhea infections.
- The median age of persons diagnosed with HIV in 2011 was 34 years. Females tended to be diagnosed at a younger age than males (female median age = 31 years; male median age = 35 years). Fifty percent of females and 51% of males were 25 to 44 years of age at time of diagnosis. The median age of persons diagnosed with AIDS in 2011 was 34 years.
- The general population of Iowa is 88.7% white, non-Hispanic; 2.8% black, non-Hispanic; 5.0% Hispanic; and 3.5% other races and ethnicities. However, only 72% of HIV diagnoses in 2011 were among white, non-Hispanic persons, illustrating a significant disparity in diagnoses among some racial and ethnic minorities. Twenty percent of HIV diagnoses were among black, non-Hispanic persons, 13% were Hispanic, and 5% were other races. The HIV diagnosis rate in 2011 was 27.3 diagnoses per 100,000 persons for black, non-Hispanic persons, 9.8 for Hispanics, and 2.7 for white, non-Hispanic persons in Iowa.
- Fifty-one percent of persons living with HIV or AIDS as of December 31, 2011, reported male-to-male sexual contact (MSM) as their primary risk. Heterosexual contact was the primary risk for 19% of persons living with HIV or AIDS, while 9% were injection drug users (IDU), and 7% reported both IDU and MSM. An additional 1% were transfusion or transplant recipients or reported hemophilia. Twelve percent had no risk identified.
- Chlamydia is the most frequently reported STD in Iowa, with 10,928 cases reported in 2011. The incidence of chlamydia has steadily climbed since it became a reportable disease. The number of reported cases has nearly doubled since 2000. In 2011, the number of chlamydia cases reached their highest numbers in Iowa since reporting of this infection began. The incidence of gonorrhea has increased by 58% since 2004. The incidence of syphilis remains low in Iowa with the number of cases remaining fairly stable over the last five years. Iowa's MSM and black, non-Hispanic populations are disproportionately impacted by syphilis, however.
- The male-to-female ratios for chlamydia and gonorrhea differ significantly between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by nearly 4 to 1; while black, non-Hispanic males outnumber black, non-Hispanic females 1.1 to 1. This may indicate that

minority females are not being screened for asymptomatic infection at the same rate as other women in the state, or it may reflect other as yet undetermined differences.

- Extrapolating from national estimates, 1.3 to 1.9% of the state's population, or 39,602 to 57,880 Iowans, may be infected with hepatitis C. However, only 9,459 cases of hepatitis C have been identified and reported to IDPH from both public and private entities since 2002. During that time, approximately 8,000 tests were conducted at IDPH-supported test sites, with an average annual positivity of 10%.



## INTRODUCTION

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This statewide profile describes the epidemiology of HIV and AIDS in Iowa and other reportable sexually transmitted diseases (STDs) through 2011. The report characterizes the distribution of these diseases in terms of geography, race, gender, age, and associated causal factors. This epidemiological profile has been prepared to assist in developing a comprehensive HIV/AIDS prevention and care plan. This description of the HIV epidemic in the state will serve to guide prevention and service efforts, to quantify unmet need for prevention and care programs, and to evaluate programs and policies in Iowa. Five key questions will be addressed:

1. What are the sociodemographic characteristics of Iowa's population?
2. What is the epidemiology, including the geographical distribution, of HIV, AIDS, and other sexually transmitted diseases in Iowa?
3. Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?
4. What are the patterns of utilization of HIV services throughout the state?
5. What are the number and characteristics of persons who know they are HIV-positive, but who are not receiving primary medical care?

## DATA SOURCES

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Data were compiled from a number of sources to present the most complete picture of the epidemic as possible. However, because few behavioral or supplemental surveillance projects are available in Iowa, core surveillance data will be utilized heavily. Each data source has strengths and limitations. A brief description of each source follows.

### 1. Core HIV/AIDS Surveillance

#### *AIDS Case Surveillance*

AIDS has been a reportable disease in Iowa since February 1983. Only persons diagnosed with AIDS, reported in Iowa, and for whom last name, date of birth, race and ethnicity, gender, date of AIDS diagnosis, and living status (living or deceased at time of report) are known are included in this report. Cumulative AIDS cases include all reported cases, living or deceased.

The definition of AIDS has been modified several times since the original 1982 case definition. That original definition included a list of opportunistic infections and diseases in persons with no known cause for diminished immunological functioning. At that time, no tests for HIV or for antibodies to the virus were available to confirm the diagnosis. The definition was first updated in 1985 to reflect new tests that detected either antibodies to the virus or the virus itself. The 1985 revised definition included several more medical conditions, when the conditions were accompanied by a positive serological or virological test for HIV. Another revision occurred in 1987, adding three more conditions, including wasting syndrome. The most substantial revision occurred in 1993, when immunological conditions were added to the definition. A CD4+ cell count less than 200 cells per microliter or less than 14% of total lymphocytes was included as AIDS-defining, even in the absence of specific physical symptoms. Three additional conditions, pulmonary tuberculosis, recurrent pneumonia, and invasive cervical cancer were added to the list of 23 clinical conditions that met the criteria for AIDS as well. This revision, and particularly the inclusion of CD4+ cell counts as AIDS defining criteria, substantially increased the number of HIV-infected persons who were diagnosed with AIDS in 1992 and reported from 1992 to 1993. Each revision may affect the number of diagnoses in that year and in subsequent years, and may make assessing trends in the numbers of new cases more difficult.

#### *HIV Case Surveillance*

HIV became reportable by name in Iowa on July 1, 1998. Anonymous testing in Iowa ceased at that time except for those tests performed through home-collection kits. Persons older than 18 months were considered to be HIV infected if they had at least one confirmed positive test (antibody or antigen), a detectable quantity of virus or viral nucleic acid isolated (viral culture or polymerase chain reaction), or had a diagnosis of HIV infection documented by a physician. Only cases reported in Iowa and for whom last name, date of birth, race and ethnicity, gender, date of first HIV diagnosis, and living status (living or deceased at time of report) are known are included in this report. Persons diagnosed with HIV before July 1, 1998, but who have not had a viral detection test or CD4+ count completed since July 1, 1998, may not have been reported to the Iowa Department of Public Health. HIV diagnosis data include persons reported to have tested positive for HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS). Also included are persons who were diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

### Diagnosis Date and Completeness of Surveillance Data

Data will be presented by the year the case of either HIV or AIDS was diagnosed (regardless of when it was reported). Many cases reported in a given year will have been diagnosed in some previous year but not reported immediately. In 2011, all of HIV cases and AIDS cases were received within 6 months of diagnosis date.

Evaluations of the surveillance system indicate that 99% of diagnosed HIV/AIDS cases have been reported. Persons diagnosed before July 1998, when HIV reporting by name began in Iowa, and persons not in care are the most likely not to have been reported. For the most part, the data represent diagnosed cases well. They do not, however, include persons who have been infected but who have not been diagnosed.

Delays in reporting might mean that a very small number of cases in the most recent year might have escaped inclusion. Reporting delays may vary among exposure, geographical, racial/ethnic, age, and gender categories. To minimize the effects of reporting delays, case reports received through February 29, 2012, have been used. These reports include only those diagnoses made through December 31, 2011.

All data are provisional and are subject to change as further information becomes available.

### Surveillance Exposure Categories

For surveillance purposes, HIV and AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and a history of injection drug use. They make up a separate category (Centers for Disease Control and Prevention, HIV/AIDS Surveillance Report, 2001). The modes of exposure are categorized in this report according to the following hierarchy:

- **“Men who have sex with men and inject drugs” (MSM/IDU)** includes men who inject nonprescription drugs and report sexual contact with other men or who report sexual contact with both men and women.
- **“Men who have sex with men” (MSM)** includes men who report sexual contact with other men, and men who report sexual contact with both men and women.
- **“Injection drug use” (IDU)** includes persons who inject nonprescription drugs.
- **“Hemophilia/Coagulation disorder”** includes persons who received Factor VIII (Hemophilia A), Factor IX (Hemophilia B), or other clotting factors.
- **“Heterosexual contact”** includes persons who report specific heterosexual contact with a person with documented HIV infection, or heterosexual contact with a person at increased risk for HIV infection, such as an injection drug user, person with hemophilia, transfusion recipient with documented HIV infection, or bisexual male. A person who reports heterosexual contact with partners whose specific HIV risks and HIV status are unknown is considered to have “no risk reported or identified” (NIR). Adults and adolescents born, or who had sex with someone born, in a country where heterosexual transmission was believed to be the predominant mode of HIV transmission (formerly

classified as Pattern-II countries by the World Health Organization) are no longer classified as having heterosexually acquired HIV. Similar to case reports for other persons who are reported without behavioral or transfusion risks for HIV, these reports are now classified (in the absence of other risk information that would classify them in another exposure category) as “NIR” (MMWR 1994:43:155-60).

- **“Transfusion”** includes persons who received blood or blood components (other than clotting factor).
- **“Received transplant”** includes persons who received tissues, organs, or artificial insemination. These cases have been combined with “transfusion” cases in this report because of the low number of cases in Iowa in each category alone.
- **“No risk reported or identified (NIR)/other”** includes persons with no identified history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. These cases are investigated further over time to identify a risk. In addition, the category includes persons whose exposure history is incomplete because they died, declined to be interviewed, or were lost to follow-up. It also includes persons who had no risk other than working in a health-care or clinical laboratory setting. There has been one confirmed case of transmission in a health-care or clinical setting in Iowa.

## 2. STD Surveillance

### *STD Case Reporting*

The Iowa Department of Public Health’s STD Prevention Program conducts statewide surveillance to determine the number of reported cases of STDs, to monitor trends in the epidemics, and to offer voluntary partner counseling and notification services. Chlamydia, gonorrhea, and syphilis cases are reportable. STD surveillance data can serve as surrogate markers for unsafe sexual practices and may demonstrate changes in behavior among specific populations that increase their risks for HIV infection. Because of a shorter time from infection to symptomatic disease, STD diagnoses may better indicate recent unsafe behavior and/or changes in community norms. In addition, certain STDs can facilitate the transmission of HIV infection. The quality of the data is highly dependent on whether the provider is public or private and may be incomplete. Women may be routinely screened whereas men are more likely to be tested only if they are symptomatic. Other data limitations are discussed in the profile.

## 3. HIV Counseling and Testing Data

### *Counseling and Testing System (CTS)*

The Iowa Department of Public Health funds 11 free, confidential HIV testing and counseling sites in Iowa, and holds Memoranda of Agreement (MOA) with two sites which are provided with rapid test kits. Participants complete risk assessments as part of a testing visit or during outreach. In 2011, 5,842 HIV tests were conducted. Twenty-nine persons tested positive (0.5%). Because the counseling and testing system collects information only from persons who seek counseling and testing services, data are not representative of all persons who engage in high-risk behaviors.

#### 4. Vital Statistics Data

##### *Birth and Death Data*

The Iowa Department of Public Health collects information on all births and deaths in Iowa. The birth certificate form includes demographic information on the newborn infant and the parents, prenatal care, maternal medical history, mode of delivery, events of labor, and abnormal conditions of the infant. Death certificates include demographics, underlying cause of death, and factors contributing to the death. The surveillance program review death certificates on a weekly basis to ascertain deaths of HIV positive persons. The surveillance program also electronically matches data with death and birth databases annually to ascertain deaths of persons with HIV/AIDS and births to HIV-infected women.

#### 5. Population Data

##### *U.S. Census Bureau*

The Census Bureau collects and provides timely information about the people and economy of the United States. The Census Bureau's Web site (<http://www.census.gov>) includes data on demographic characteristics (e.g., age, race, ethnicity, and sex) of the population, family structure, educational attainment, income level, housing status, and the proportion of persons who live at or below the poverty level. Summaries of the most requested information for states and counties are provided, as well as analytical reports on population changes, age, race, family structure, and apportionment. State- and county-specific data are easily accessible, and links to other Web sites with census information are included.

#### 6. HIV Care Data

##### *Ryan White Part B Data*

Since 1993, the HIV/AIDS Program of the Iowa Department of Public Health (IDPH) has collected data on persons served by the Iowa Ryan White Part B Program. To be eligible for Part B services, a person must have HIV, be a resident of Iowa, and have an income that is equal to or less than 200% of the current year's federal poverty level. Part B services include medical case management, non-medical case management, emergency financial assistance, transportation services, outpatient medical care, oral health care, mental health services, and substance abuse services. Throughout Iowa, the part B services may vary by location depending on the size of the agency and the number of individuals that are served.

The Ryan White Part B Program implemented the statewide deployment of CAREWare in September 2008. A central server is used to house data from all Part B providers, including the ADAP and one Part C provider. Two other Part C clinics in Iowa utilize CAREWare to maintain their client-level data. Utilization of the current version of CAREWare will ensure that all required client-level data elements will be collected by providers and reported to HRSA.

Furthermore, the "real time" nature of the networked system allows the Ryan White Part B Program to monitor specific indicators more closely (e.g., number of clients without medical insurance), instead of waiting several months until the provider is required to submit a report. Iowa is one of the first states to use the ADAP module in CAREWare, and there is great potential for measuring and improving quality through this mechanism. CAREWare

allows the sharing of information between agencies, thereby improving referral times, the tracking of clients, and the tracking of quality indicators.

Information collected from the service providers includes basic demographic and risk information, eligibility verification data (current address, current income, HIV diagnosis date, Iowa Medicaid number), the type of services received, the date and quantity of services received, the cost of these services, and other pertinent information (history of substance abuse or mental health treatment, veteran status, current pregnancy status). The data indicate which Ryan White resources are being used, how often, and by whom. However, these data only reflect persons who (1) know their HIV serostatus, (2) are currently seeking care and treatment services from Ryan White Part B-funded providers, and (3) are financially eligible to receive services. For Part B services reporting purposes, individuals that switched from one Part B service provider to another Part B service provider may be counted twice during the service year.

#### *AIDS Drug Assistance Program (ADAP)*

The AIDS Drug Assistance Program provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS and who qualify. Iowa's ADAP also provides insurance assistance to qualifying insured persons living with HIV/AIDS who are unable to pay for their premiums, medication copayments, and deductibles. For ADAP reporting purposes, the ADAP "Whole Program", which includes both medication and insurance assistance, the data are unduplicated, client-level data. Data presented in the medication assistance and insurance assistance may be duplicated if a person utilized both medication assistance and insurance assistance within the same year. An example of this would be a person previously receiving medication assistance and then later gaining employment and qualifying for insurance coverage. Information collected in the database is limited to basic demographic information on each client, eligibility verification data in regards to income and insurance coverage, and laboratory information at the time of application.

#### *Ryan White Part C Data*

Ryan White Part C funding provides for ongoing medical care, medical case management, oral health care, psychosocial services, nutritional, and other care services for persons with HIV infection. Funding goes directly to providers of medical care, and patients are charged fees according to a sliding scale. There are four Part C providers in Iowa. Each has a different method of collecting and storing data. Ryan White Service Data Reports (RSR) are submitted to the Health Resources and Services Administration (HRSA) annually, and IDPH has receives a copy of these summary reports. The RSR data are in aggregate form only. Clients who used more than one provider in a year may be counted more than once. In addition, Ryan White Part C data cannot be generalized to all HIV-infected persons living in the state because they are collected only for persons who (1) know their HIV status and (2) are currently seeking care and treatment services from Part C-funded providers.



## GUIDELINES TO FACILITATE INTERPRETATION OF THE DATA

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Decisions about how to allocate limited resources for prevention and care services depend, in part, on appropriate interpretation of epidemiological data. The following guidelines are intended to facilitate proper interpretation of the tables and figures presented in this profile.

1. **Carefully examine the entire table or graph.** Read the title of the table or figure and look closely at the type of information presented on the vertical and horizontal axes. Are the data showing the number of cases or a percentage of the total cases? Pie graphs and stacked bar graphs can show total numbers or percentages. Examine how the graphs are scaled. Does the number of cases increase by 5, 10, 100, or some other factor? What is the time period covered? Have any data been excluded from total counts?
2. **These data have certain limitations.** This report will present both AIDS case-report data and HIV infection case-report data. The first AIDS case reported in Iowa was diagnosed in 1983. Reporting of HIV-infected persons in Iowa began July 1, 1998. The number of HIV-infected persons reported by name is relatively small and covers a reporting period from July 1, 1998 through February 29, 2012. HIV surveillance reports may not be representative of all infected persons because not all infected persons have been tested or reported. AIDS case-report data span 29 years and are relatively complete. However, because HIV infection may take many years to develop into AIDS, AIDS case reports do not represent current or emerging trends in the HIV epidemic. There are also reporting delays of HIV and AIDS cases. The tables and figures in this profile do not account for these reporting delays. Both HIV and AIDS data are from the entire state of Iowa, but data represent only those individuals living in Iowa at the time of diagnosis. State and county of diagnosis do not change even if a person later changes counties or moves out of state. Individuals who are diagnosed and reported while residing in another state and who subsequently move to or receive care in Iowa are included only in Section 2 (Ryan White CARE Act) of the profile.
3. **Be careful not to over-interpret** small changes or differences from year to year. Comparing one year with another year may be misleading, particularly given the low numbers of cases reported in Iowa annually. Significant changes over time will be highlighted in the narrative of this document.
4. **Look for consistencies with other information sources.** Different findings should be examined carefully. All data sources are not equivalent in their generalizability to the population of Iowa. In particular, scientific studies should be examined for their purposes and for the population studied. Where scientific studies are presented, their limitations will be included in the discussion.
5. **Diagnosis rates** have been calculated for 12-month periods per 100,000 population. The denominator, unless otherwise noted, for calculating rates is based on 2011 population estimates from the U.S. Bureau of Census. The numerator is the number of cases reported during the 12-month period. This number is divided by the population estimate and multiplied by 100,000. Race-specific rates are the number of cases reported for a particular racial/ethnic group during the preceding 12-month period divided by the estimated population for that race/ethnicity, multiplied by 100,000.

## ORGANIZATION OF THE PROFILE

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The epidemiological profile is organized into two main sections, within which six key questions are addressed.

### Section 1: Core Epidemiological Questions

This section provides the reader with an understanding of the characteristics of the general population of Iowa, the distribution of HIV disease in the state, and a detailed look at who is most at risk for infection. The section is organized around three key questions:

**Question 1: What are the sociodemographic characteristics of Iowa's population?** Orients the reader to the overall demographic and socioeconomic characteristics of the general population in Iowa. May be used to establish a baseline for comparison to other states and other populations.

**Question 2: What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?**

Examines the magnitude and distribution of the disease in the state by gender, age, race/ethnicity, and associated risk factors. Changes over time will be highlighted. Intended to be used by prevention providers to plan and evaluate their work.

**Question 3: Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?**

Provides a detailed look at high-risk populations using direct and indirect measures of high-risk behavior. Counseling and testing data, STD data, viral hepatitis data, and other survey data will be used to examine this question.

### Section 2: Ryan White CARE Act Special Questions and Considerations

This section focuses on questions pertinent to care planning. It describes access and use of medical care services by persons with HIV infection in Iowa. It is organized around three key questions:

**Question 1: What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?**

Describes Ryan White Part B and Part C care services and examines the characteristics of persons who accessed these services.

**Question 2: What are the patterns of utilization of HIV services by persons with HIV in Iowa?**

Characterizes the patterns of use of HIV primary medical care and support services by persons with HIV/AIDS.

**Question 3: What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?**

Estimates the number of persons out of HIV primary medical care for a year or more and describes the characteristics of those persons.



*Section*

**1**

**CORE  
EPIDEMIOLOGICAL  
QUESTIONS**

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**Question 1: What are the sociodemographic characteristics of Iowa's population?**

**Question 2: What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?**

**Question 3: Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?**

## Question 1

### What are the sociodemographic characteristics of Iowa's population?

This section provides background information about Iowa's population. The purpose is to provide a context for assessing the potential impact of HIV, AIDS, and other sexually transmitted diseases in Iowa.

#### *Section Highlights*

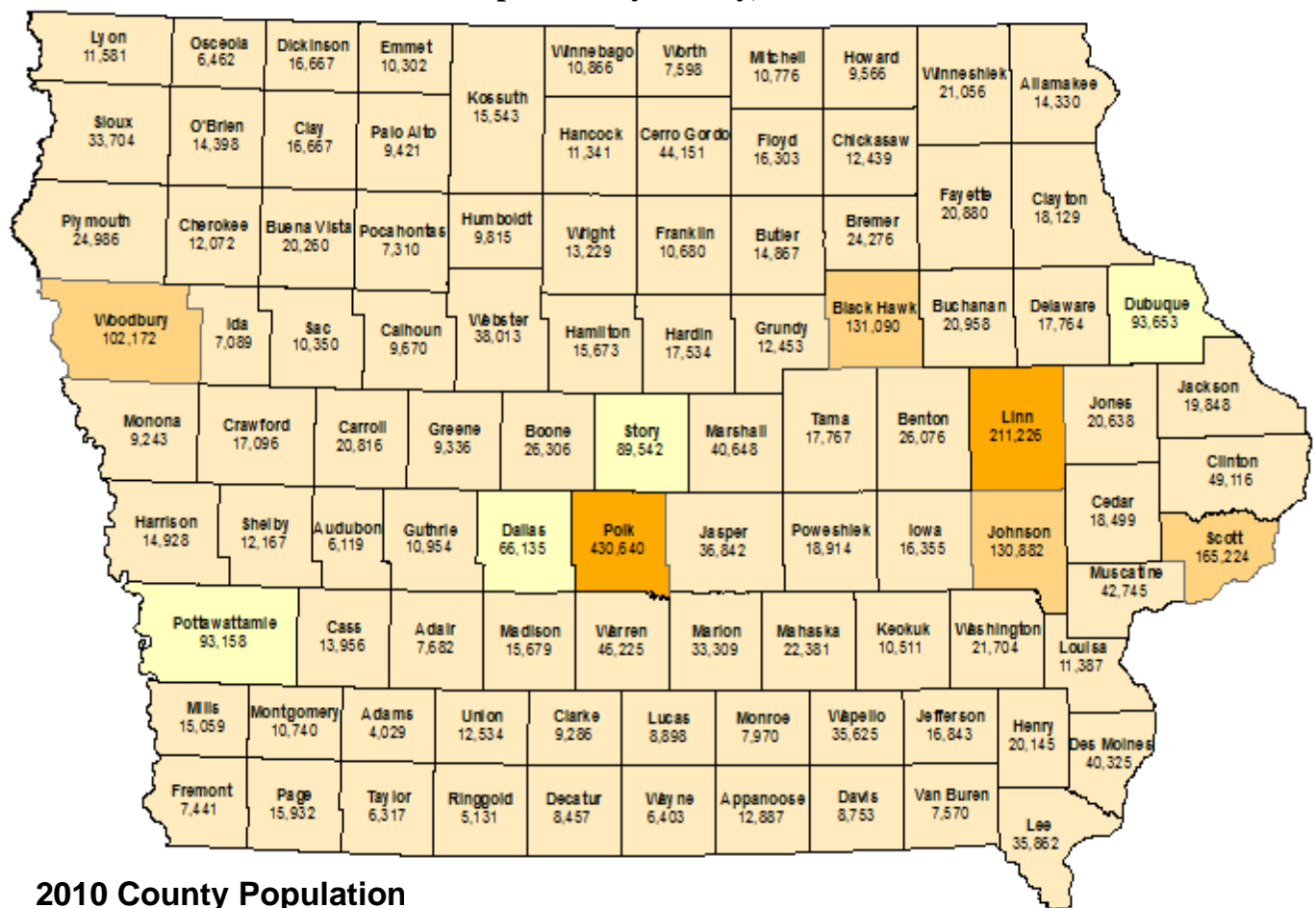
- The 2010 census from the U.S. Census Bureau indicates that there are 3,046,355 persons residing in Iowa, ranking it 30<sup>th</sup> in the nation in population. Just over 89% of the total population is white, non-Hispanic and approximately 11% are members of racial or ethnic minority groups. The Hispanic population is growing the fastest and accounts for 5% of the total population. Hispanics are now the largest minority population in the state.
- The ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story and Woodbury account for 50% of the total population of Iowa. These counties also report higher rates of poverty, unemployment, uninsured persons, and crime than other counties.
- Approximately 12% of Iowa's population lives below the poverty level, but over 14% of youth 17 years or younger live in poverty. Those within the age group of 25 to 34 years were least likely of all age groups to have health insurance.
- Iowa's population is aging. The median age of the population is 38 years, up from 34 years in 1990. By 2030, the median age is expected to climb to 40 years. With 15% of its population 65 years or older, Iowa ranks 4<sup>th</sup> in the nation in the percentage of elderly persons residing in the state. The percentage of the population over age 65 is expected to increase to 22% by 2030 (U.S. Census Bureau). The percentage of youths (under the age of 18) is expected to decrease from 25% in 2000 to 22% by 2030.

## DESCRIPTION OF IOWA'S POPULATION

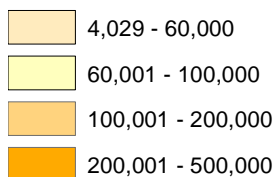
Iowa is an agricultural state, with a land area of 55,869 square miles. Iowa comprises 99 counties (Figure 1) with an estimated 2010 population of 3,046,355 persons. The state ranks thirtieth in the nation in population. Five counties (Dallas, Dubuque, Pottawattamie, Story and Woodbury) have between 50,000 and 120,000 people, and five counties (Black Hawk, Linn, Johnson, Polk and Scott) have more than 120,000 people. In 2000, Clinton County was the tenth most populous county, with just over 50,000 persons. Since then, the population is estimated to have declined to fewer than 50,000. In 2005, Dallas County surpassed Clinton County to become the tenth most populous county in the state.

Iowa's population has shifted over the past ten years from rural to urban centers with the most significant growth occurring in and around the capital of Des Moines and in the Interstate-380 corridor between Iowa City and Cedar Rapids. In 2008, the state population estimate exceeded 3 million for the first time.

**Figure 1**  
**Iowa's Population by County, 2010**



## 2010 County Population

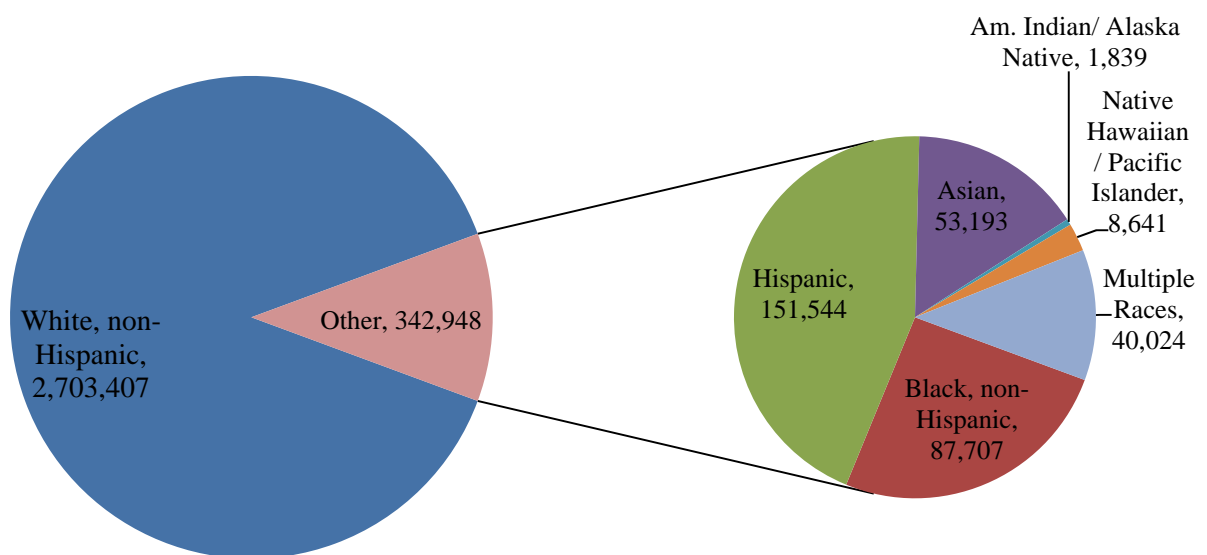


## Racial and Ethnic Distribution

About 89% of Iowa's population is white and non-Hispanic (Figure 2, Table 1). Hispanic residents have become the largest minority population in Iowa and are now estimated to account for 5.0% of the population. At the time of the 2010 census estimate, more than one-half (54%) of the state's Hispanic residents lived in Pottawattamie, Johnson, Marshall, Muscatine, Polk, Scott, and Woodbury counties.

The next largest minority group is black, non-Hispanic residents, accounting for an estimated 2.5% of the population and reflecting a slight increase from 2.1% in the 2000 census. Black Hawk, Johnson, Linn, Polk, and Scott counties account for nearly three-fourths of the state's total black, non-Hispanic residents. The number of black residents is projected to double by the year 2040.

**Figure 2**  
**Iowa's Population by Race and Ethnicity**  
**2010**



Iowa's Asian population increased from 1.3% in 2000 to 1.7% in 2010. More than half (52%) of the state's Asian population lived in Johnson, Polk, or Story counties in 2010. American Indians constitute the smallest ethnic population in Iowa, making up 0.4% of the total population. In 2011, the largest numbers of this ethnic group lived in Tama, Polk, and Woodbury counties.

Net *migration* (i.e., net movement of foreign and/or domestic persons into or out of Iowa) was a negative 6,317 persons from 2000 to 2010. In other words, more people moved out of Iowa than moved into the state. Migration into Iowa was largely the result of emigration from other countries. From 2000 to 2010, 38,692 foreign immigrants entered the state. At the same time, 45,009 persons left the state to immigrate domestically. This means that the increasing diversity

in Iowa's population is mainly the result of persons moving into Iowa from other countries rather than an influx of minorities from elsewhere in the U.S. (US Census Bureau, 2011).

**Table 1**  
**Iowa's Population by Race, Ethnicity, and Gender**  
**2010**

Race and Ethnicity	Females		Males		Total	
	#	(%)	#	(%)	#	(%)
White, non-Hispanic	1,373,345	(89)	1,330,345	(88)	2,703,407	(89)
Black, non-Hispanic	41,342	(3)	46,365	(3)	87,707	(3)
Hispanic	71,553	(5)	79,991	(5)	151,544	(5)
Asian	26,792	(2)	26,401	(2)	53,193	(2)
Am. Indian/ Alaska Native	897	--	942	--	1,839	--
Native Hawaiian/ Pacific Islander	4,393	--	4,248	--	8,641	--
Multiple Races	19,997	(1)	20,027	(1)	40,024	(1)
<b>Total</b>	<b>1,538,319</b>		<b>1,508,319</b>		<b>3,046,355</b>	

*Source: U.S. Census Bureau*

### Age Distribution

Iowa's population is aging. The median age of the population is 38.1 years, up from 34.1 years in 1990. By 2030, the median age is expected to climb to 39.9 years. With 15% of its population 65 years or older, Iowa ranks 4<sup>th</sup> in the nation in the percentage of elderly persons residing in the state. The percentage of the population over age 65 is expected to increase to 22.4% by 2030 (U.S. Census Bureau). The percentage of youths (under the age of 18) is expected to decrease from 25.1% in 2000 to 22% by 2030. The 2010 population by gender and selected age groupings are displayed in Table 2.

**Table 2**  
**Iowa's Population by Age and Gender**  
**2010**

Age Group (years)	Females	Males	Total	
	#	#	#	(%)
Less than 2	38,567	40,333	78,900	(3)
2-12	217,116	227,685	444,801	(15)
13-24	248,074	262,085	510,159	(17)
25-44	367,211	379,920	747,131	(25)
45-64	407,457	405,019	812,476	(27)
65 and older	259,611	193,277	452,888	(15)
<b>Total</b>	<b>1,538,036</b>	<b>1,508,319</b>	<b>3,046,355</b>	

*Source: U.S. Census Bureau*

## Poverty, Health Insurance, and Employment

According to 2010 model-based estimates from the U.S. Census Bureau, 11.6% of Iowa's population were living below the poverty level, compared to the national average of 13.8%. This was an increase of 2.3% from 2002 estimates for Iowa residents. However, 14.2% of Iowa's youth 17 years or younger live in poverty, up from 10.9% in 2002.

Approximately 12% of Iowa's residents are without health insurance. Those within the age group of 25 to 34 years were least likely of all age groups in Iowa to have health insurance, and males were 1.6 times as likely as females in that age group to be without insurance. Seventeen percent of those between the ages of 18 and 24 were without insurance, including 23% of males in this age group (Table 3).

**Table 3**  
**Percent Uninsured by Age**  
**2011**

Age group (years)	% Uninsured		
	Females	Males	Total
18-24	10.1	23.4	16.8
25-34	17.7	22.7	20.3
35-44	13.0	18.0	15.5
45-54	8.1	13.6	10.8
55-64	8.3	10.5	9.4
65-74	0.5	2.2	1.3
75 and over	0.5	0.1	0.4
<b>Total adults</b>	<b>8.9</b>	<b>14.5</b>	<b>11.7</b>

*Source: Behavioral Risk Factor Surveillance System, Iowa Department of Public Health*

Iowans who report lower household incomes are more likely not to have health insurance. Of people who reported an annual income of less than \$15,000, 28% reported having no health insurance coverage. Less than 2% of people who reported an annual income of \$75,000 or more did not have health care coverage (IDPH Behavioral Risk Factor Surveillance System, 2010).

Iowa's unemployment rate was reported at 6.0% for 2011, up from 4.3% in 2008 and compared to 9.7% nationally in 2011 (2011 Factbook, Legislative Fiscal Bureau, State of Iowa). In 2011, Iowa was ranked seventh lowest in the nation in unemployment. In Iowa, men experience a higher rate of unemployment than women. The lower unemployment rate for women is due, in part, to women accepting part-time employment, temporary employment, and working out of their homes more often than men (Kahn, Iowa Workforce Development). Minority workers also experience a higher unemployment rate. In 2009, the total minority unemployment rate for Iowa was 14.0%, more than twice the rate of 6.0% for the total labor force.

## Correctional Facilities

Iowa has nine state correctional facilities and a community-based correctional system. The prison inmate population at the nine correctional facilities increased by 202% from 1988 through 2007, but has since leveled off. There were 8,707 state inmates at the beginning of fiscal year 2011, which was a decrease of 30 inmates from FY 2008. There were just over 3,400 new admissions and, 1,266 readmissions in FY2011. In addition, 4,800 offenders were released into the community during FY2011. The Criminal and Juvenile Justice Planning Division predicts that if criminal/incarceration practices remain the same, the prison population will reach 9,000 inmates by FY 2018. The population of prisoners was 116% of design capacity at the end of FY2010 (Department of Corrections; Iowa Legislative Factbook, 2011).

A 2005 report by the Sentencing Project called *Uneven Justice: State Rates of Incarceration by Race and Ethnicity* reviewed rates of incarceration by race in all 50 states. Iowa was reported to have the most disproportionate rates of incarceration (per 100,000 population) between white and black persons of any state. The rate of incarceration per 100,000 population is nearly 14 times higher among blacks in Iowa than among whites. Only the District of Columbia has more disproportionate rates. Iowa ranked 10th among states for disproportionate rates of incarceration among Hispanic persons.

In 2011, the Iowa Department of Corrections reported that 56 offenders were HIV positive. In that year, 16 HIV-positive offenders were released from the prison.

## Substance Abuse

Drug-related prison admissions can be used as an indicator of drug abuse levels in the state. From 1995 to 2004, admissions for drug-related offenses (excluding alcohol-related offenses) increased by 248%, from 316 in 1995 to 1,110 in 2004. From 2004 to 2009, drug-related admissions decreased steadily, reaching a low of 693 admissions in 2009. Since then, admissions have begun increasing again. In 2011, there were 880 drug-related admissions. Both the decrease and the subsequent increases can be attributed to trends in methamphetamine lab incidents. The decrease was directly related to the passage of a 2005 state law restricting access to pseudoephedrine, a chemical used in the manufacture of methamphetamine<sup>1</sup>. Since 2008, however, methamphetamine lab incidents have increased.

Data from substance abuse treatment facilities in Iowa show that the number of persons treated for methamphetamine addictions peaked in FY 2004 at 14.6%, declined to 7.5% in FY2007, but has increased each year since. In FY2011, it was 9.6% (Table 4).

Convictions for methamphetamine use and crack cocaine use can greatly affect rates of incarceration by race and ethnicity. In Iowa, prison admissions related to crack cocaine rose from 85 offenders in FY2005 to 144 offenders in FY2008 while convictions for methamphetamine use were falling.<sup>2</sup> This has had an effect on the proportion of offenders who are black. As admissions for methamphetamine-related offenses fell, so did the proportion of new offenders who were white. Methamphetamine use is more common among white persons,

<sup>1</sup> Paul Stageberg. 2008. Iowa Prison Population Forecast FY2008-2018. Iowa Department of Human Rights, Division of Criminal and Juvenile Justice Planning.

<sup>2</sup> Ibid.

whereas crack cocaine use is more common among black persons. As a result, the percentage of black inmates in Iowa's prison system increased to 25% in FY2008. This has begun reversing with the increase in meth-related offenses since that time.

In FY2011, 1,093 of the 47,974 persons (2%) receiving treatment at a substance abuse treatment facility in Iowa reported injecting drugs at least once in the previous month. The majority of the injectors, 93%, were white, 3% were Hispanic, 3% were black, and 1% was American Indian or Alaskan Native. Polk County was the residence reported for 24% of the injection drug users admitted, and Scott, Linn, and Black Hawk counties each accounted for 7% of the injection drug users receiving treatment in FY2011.

**Table 4**  
**Primary Substance of Abuse for Adult and Juvenile Clients in Treatment Programs**  
**Iowa, FY 2000 – FY2011**

Fiscal Year	Primary Problem – Type of Drug						Total Clients*
	Alcohol	Marijuana	Methamphetamine	Crack	Heroin	Other	
2000	62%	21%	9%	5%	.5%	1.5%	43,217
2001	61%	22%	11%	5%	.5%	1.5%	44,147
2002	59%	23%	12%	4%	.5%	1.8%	42,911
2003	58%	22%	13%	5%	.6%	1.9%	40,925
2004	56%	23%	15%	5%	.6%	1.8%	42,449
2005	56%	22%	14%	5%	.6%	1.9%	43,692
2006	56%	23%	14%	5%	.5%	2.2%	44,863
2007	58%	23%	11%	5%	.4%	2.9%	47,252
2008	62%	23%	8%	5%	.4%	2.9%	44,528
2009	61%	23%	8%	4%	.5%	3.4%	44,849
2010	59%	25%	9%	3%	.7%	4.0%	44,904
2011	55%	26%	10%	2%	.9%	6.7%	47,974

\*Persons may be counted more than once if a client is later admitted for a different substance.

## Mental Health

Statistics on the number of Iowans with disabilities vary, depending on definitions and methods used to produce them. The U.S. Census Bureau's American Community Survey found that in Iowa, an estimated 400,000 individuals have functional limitations. In other research, an estimated 700,000 Iowans experience at least some symptoms of mental disorder each year. Most never access the public service system, and data on the use of private pay services are lacking. Approximately 50,000 Iowans have intellectual or developmental disabilities. The same number is estimated to have brain injury. Data on the number of people with other types of disabilities are scant, for a variety of reasons. Access to services varies greatly, depending on the type of disability.<sup>3</sup>

<sup>3</sup> A Life in the Community for Everyone - The Department of Human Services Olmstead Plan for Mental Health and Disability Services: 2011 – 2015.



## Question 2

**What is the epidemiology, including the geographical distribution, of HIV and AIDS in Iowa?**

This section will present data on who is infected, how they became infected, where HIV and AIDS cases are occurring, and how this may be changing over time. Data will be presented by year of diagnosis, regardless of year of report (see Core HIV/AIDS Surveillance under Data Sources at the beginning of this chapter). Unless noted, all data are from case surveillance data from the HIV/AIDS Program at the Iowa Department of Public Health. HIV and AIDS cases diagnosed through December 31, 2011 will be presented. To allow for reporting delays, data were collected through February 29, 2012.

### *Section Highlights*

- There were 120 HIV diagnoses in 2011, the third highest since HIV reporting began in 1998. This was 6 more than in 2010 and 5 more than the 5-year average of 115. HIV diagnoses have been increasing at about 3 per year since 2000. U.S.-born, white, non-Hispanic males have accounted for most of the increase. Except for a slight increase in 2011, diagnoses among the foreign born have been declining since 2002. Hispanics accounted for 50% of diagnosis among foreign-born persons in 2011.
- There were 64 persons living with HIV or AIDS per 100,000 population in Iowa in 2011, an increase of 11 persons per 100,000 from 2008. This is due largely to a slowing in HIV and AIDS deaths and recent increases in the number of newly diagnosed HIV disease cases.
- Diagnoses of HIV and AIDS overwhelmingly occur among men and among persons 25 to 44 years of age. Of note, diagnoses among persons 13 to 24 years of age have quadrupled in nine years, rising from seven in 2003 to 28 in 2011.
- Median age at diagnosis of HIV has not changed substantially in the last 10 years. In 2011 the median age for adults and adolescents was 34 years. Males (median = 35 years) tended to be older than females (median = 31 years.) Median age at diagnoses of AIDS decreased from 43 years in 2008 to 41 years in 2011. Significant differences were seen in median age at diagnosis among males and females. Median age at AIDS diagnosis for females decreased from 43 years in 2008 to 37 years in 2011 while the median for males increased from 40 years in 2008 to 42 in 2011.
- Black, non-Hispanic males, black, non-Hispanic females, and Hispanic males are over-represented among HIV and AIDS cases when their population sizes are taken into account. Black, non-Hispanic males have HIV diagnosis rates over six times those of white, non-Hispanic males. Hispanic males have HIV diagnosis rates more than double those of white, non-Hispanic males.
- Diagnoses among the MSM population have increased in recent years. MSM remains the predominant risk category. In 2011, 62% of all males diagnosed with HIV reported having sex with other males.

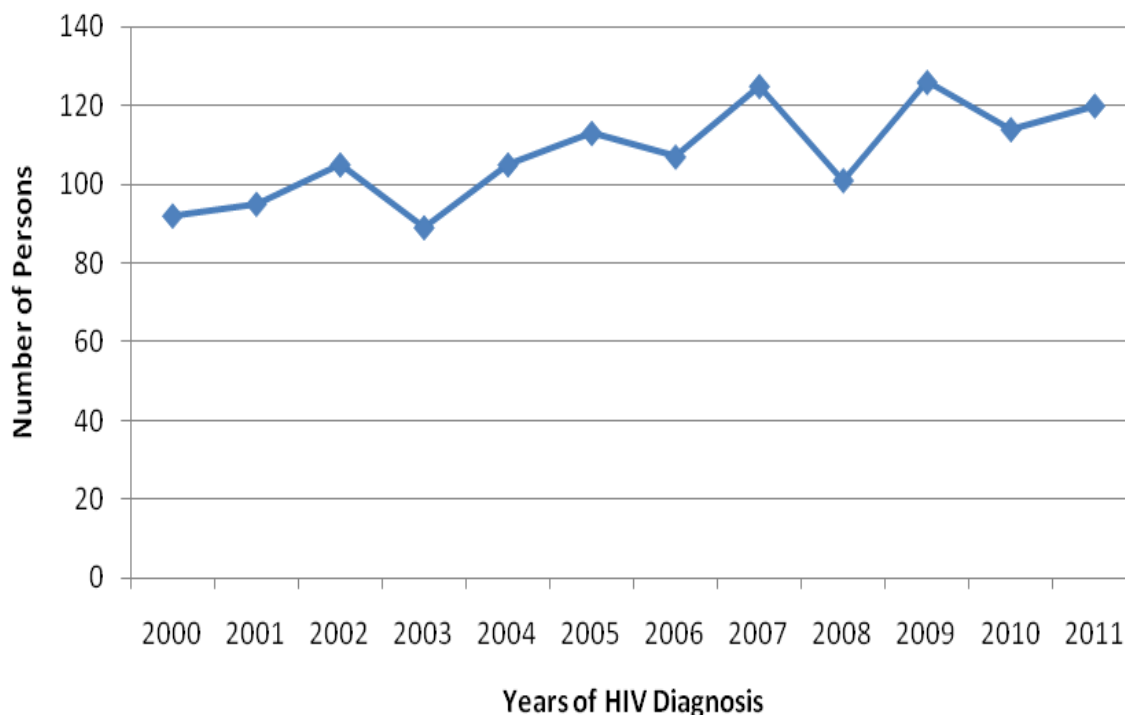
## Diagnoses of HIV Infection

Figure 3 shows the number of HIV diagnoses in Iowa since 2000. Graphical presentations of HIV diagnoses over time show the date of the first positive HIV test reported for all persons residing in Iowa at the time of diagnosis, regardless of stage of infection (HIV or AIDS). Persons with AIDS who were diagnosed with HIV in Iowa are included here and in sections that present AIDS data.

HIV diagnosis date has been collected for all persons reported with AIDS since 1992, and for persons reported with HIV infection since July 1, 1998. Evaluations of the surveillance system indicate that case reporting is 99% complete. Figure 3 indicates that diagnoses of HIV infection in Iowa have been steadily increasing, averaging approximately 111 persons each year for the past 10 years. Since HIV name reporting began in 1998, the number of persons diagnosed in a single year in Iowa reached the 120 mark for the third time in 2011 (120 cases), other years being 2009 (126 cases) and 2007 (125 cases).

**Figure 3**

### HIV Diagnoses<sup>1</sup> 2000 through 2011



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

## Factors Affecting the Number of Diagnoses

Although HIV diagnoses are one indication of HIV infection rates, they do not present the complete picture. Many factors may affect when or *if* a person gets tested for and diagnosed with HIV infection. Many service providers note the following barriers to HIV testing:

- a general lack of knowledge about how HIV is transmitted
- an individual's belief that he/she is not at risk for contracting HIV (perceived risk);
- logistical barriers such as proximity to testing sites, transportation, and limited hours of operation;
- language barriers; and
- pervasive stigma associated with HIV.

The impact of testing barriers on the state's capacity to identify cases of HIV in Iowa may be significant. Individuals who are infected and do not know they are infected may not seek testing unless they have the means, the knowledge, or a significant catalyst (e.g., symptoms). Considering these possible limitations, studying a broad sample of directed testing efforts is, to some degree, an examination of the potential prevalence of the disease.

In 2009, the Iowa Department of Public Health (IDPH) with the Center for Disease Control and Prevention (CDC) funded 12 free, confidential HIV counseling, testing, and referral (CTR) sites and held Memoranda of Agreement (MOA) with eight sites which were provided with rapid test kits. In 2010, IDPH funded 12 CTR sites and held MOAs with two sites. Six MOA sites were dropped from 2009 to 2010 in order to concentrate testing efforts on high-risk and disproportionately impacted populations. In 2011, 11 CTR sites were funded by IDPH, along with two MOAs.

Another change in 2011 included the addition of a directly funded CDC project. Under this project, two existing CTR sites received additional funding to focus on HIV testing for Men Who Have Sex with Men (MSM). As indicated in the data profile below, these efforts improved overall HIV prevention services for MSM in Iowa; however these MSM data were subsequently directed out of the state's dataset and into the CDC-directly funded dataset.

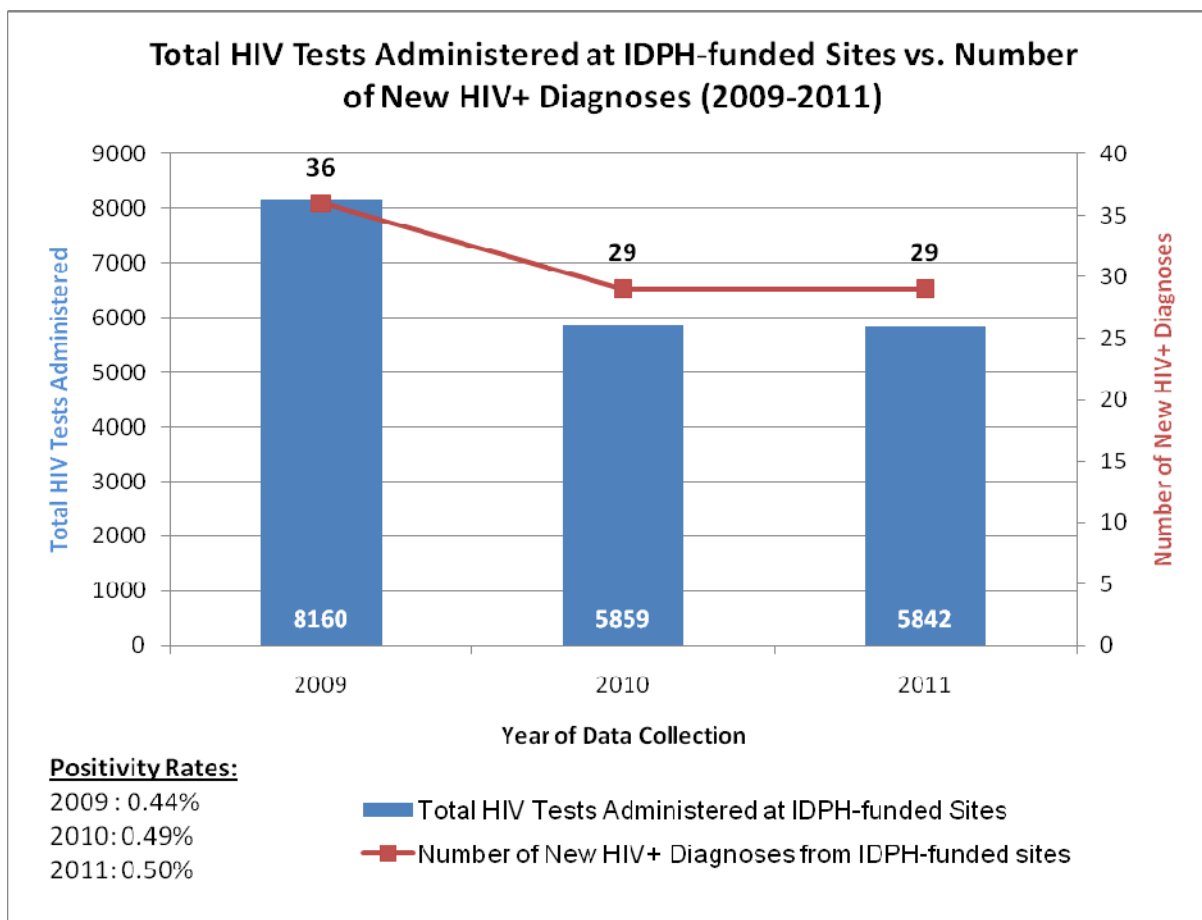
Data in this profile include only testing at IDPH-funded sites. Participants at all CTR sites completed risk assessments during their visits to testing sites or during outreach events. These data, indicating general demographic characteristics of individuals being tested, as well as specific risk behaviors, were then entered into a web-based data reporting system, EvaluationWeb. Findings, according to data pulled from EvaluationWeb, are presented below.

## Number of HIV Tests Performed by IDPH-Funded Agencies

In 2009 approximately 8,160 HIV tests were administered at IDPH-funded agencies and clinics. Among those tested, 36 clients tested positive for HIV infection (0.44%). In 2010, the expectation to reach individuals from high-risk or disproportionately impacted populations increased from 40% or 60% of total tests administered to 80%. In order to meet this expectation,

IDPH increased screening measures and consequently saw a decrease in overall testing, reporting 5,859 tests. Twenty-nine (29) individuals tested positive for HIV, yielding a positivity rate of 0.49%. In 2011, contractors completed 5,842 HIV tests, with 29 individuals testing positive (.50%). Figure 4 illustrates the number of HIV tests conducted at IDPH-funded CTR sites from 2009-2011, and the number and percent of those individuals who tested positive.

**Figure 4**  
**Total HIV Tests Administered at IDPH-Funded Sites vs. Number of New HIV Diagnoses, 2009 through 2011**



### Race and Ethnicity of Individuals Receiving HIV tests from IDPH-Funded Agencies

In 2006, after studying statewide epidemiology data, Iowa's Community Planning Group (CPG) prioritized disproportionately impacted populations—racial or ethnic groups appearing over-represented in infection statistics (Black/African-Americans and Hispanic/Latinos). The CPG also prioritized efforts to reach individuals participating in high-risk behaviors (e.g., men who have sex with men). The results of those efforts will be discussed in the next section. Racial and ethnic trends of HIV testing clients at IDPH-funded agencies from 2009 through 2011 are examined below.

Although overall testing decreased from 2009 to 2011, testing among prioritized racial or ethnic populations has increased. In 2009, non-Hispanic, Black/African-Americans represented 22% of total HIV tests administered by contracted agencies. This number rose to 27% in 2010 and 33% in 2011. Hispanic/Latino testing increased greatly, from 3% in 2009 to 15% in 2011. Similarly, the percent of HIV-positive diagnoses among Hispanic/Latino clients increased from 3% in 2009 to 21% in 2011.

Many agencies reported that language barriers contributed to low Hispanic/Latino testing numbers. Additionally, providers identified stigma—negative perceptions of homosexuality and the misconception that HIV is an exclusively “gay disease”—as a significant reason many individuals from Black/African-American and Hispanic/Latino communities did not access prevention services. Building trust and rapport with disproportionately impacted populations has been cited as vital to prevention and testing efforts. Several agencies have initiated social networking and community-level strategies—strategies that spread correct knowledge and supportive beliefs to change behavioral norms within a connected community—to counter stigma and misconceptions.

Each year, CTR sites have tested low numbers of American Indian/Native Alaskans, Asians, and Native Hawaiian/Pacific Islanders—no group exceeding 2% of total HIV tests during any year. This may be indicative of the low number of individuals from these particular groups in Iowa; and/or it may reflect one or more barriers listed earlier.

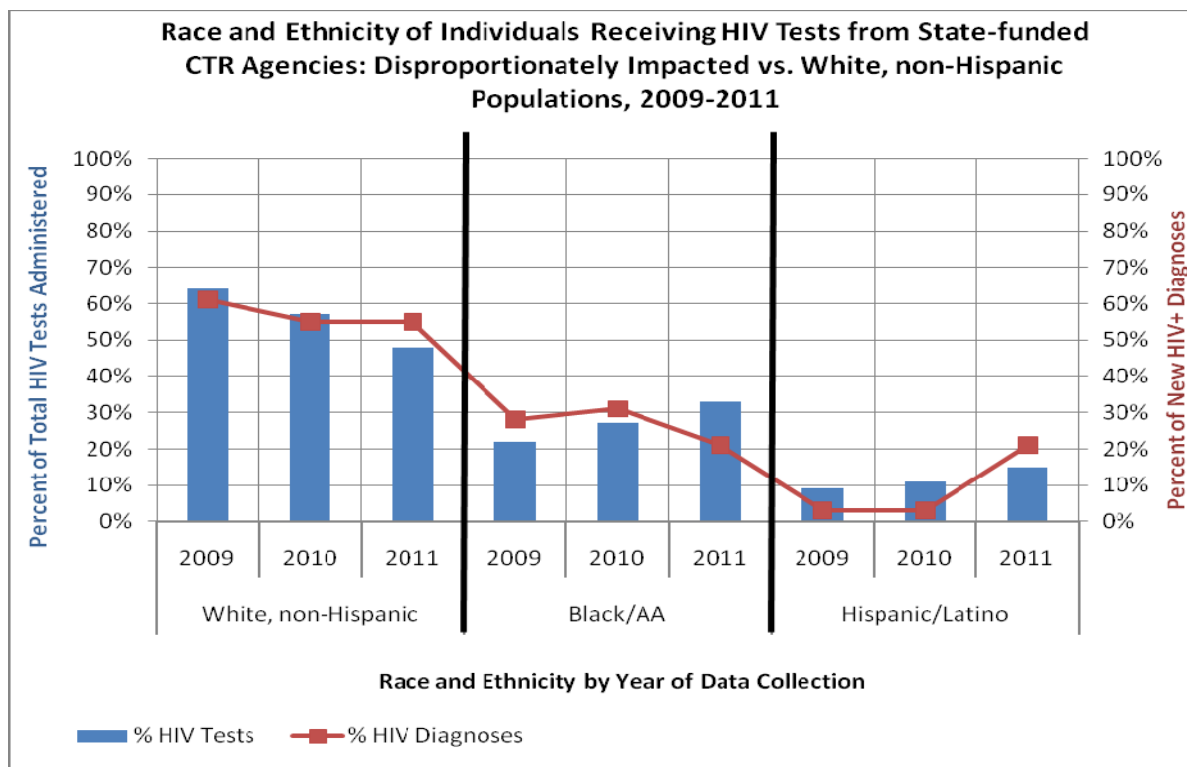
Counseling, testing, and referral trends among disproportionately impacted populations as they compared to White, non-Hispanics, are illustrated in Figure 5.

#### Risk Behaviors of Individuals Receiving HIV tests at IDPH-Funded Clinics

Behavioral trends of individuals receiving HIV tests at IDPH-contracted agencies are discussed in this section. As indicated earlier, the CPG prioritized certain high-risk groups, including: men who have sex with men (MSM), injection drug users (IDU), men who have sex with men and use injection drugs (MSM/IDU), and high risk heterosexuals (HRH; for example, heterosexuals who have been diagnosed with a sexually transmitted disease within the past year or who have had sex with someone who is HIV+). Any client who did not qualify under one of these risk categories was called *General Population*. It is important to note that, for many reasons, some clients did not disclose all risk behaviors.

*Note on Data Collection.* A dataset requiring adjusted figures is General Population. When indicated, the reported General Population data have been adjusted to exclude members of disproportionately impacted populations (Black/African-Americans and Hispanic/Latinos).

**Figure 5**  
**Race and Ethnicity of Individuals Receiving HIV Tests from State-funded CTR Agencies:**  
**Disproportionately Impacted vs. White, non-Hispanic Populations**  
**2009 through 2011**



IDPH-funded CTR sites saw a relatively steady percentage of MSM from 2009 through 2011, ranging from 13% of all HIV tests at the lowest (2009, including MSM/IDU) to 18% at the highest (2010, including MSM/IDU) each year. Note that were the data from the directly funded CDC project to be included in these figures, 2011 would represent the highest percentage of HIV testing for MSM (19% of all HIV tests were administered to MSM, including directly funded project data). However, to what degree MSM contributed to new HIV diagnoses varied somewhat. In 2009, MSM constituted 52.7% of all HIV-positive diagnoses at IDPH-funded sites. In 2010, this jumped to 65.5%. In 2011, excluding the MSM data gathered via the CDC directly funded project, MSM composed 48.3% of HIV-positive diagnoses (*With the directly funded project data, this figure increases to 55%.*). This will be discussed under Question 3, *Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?*

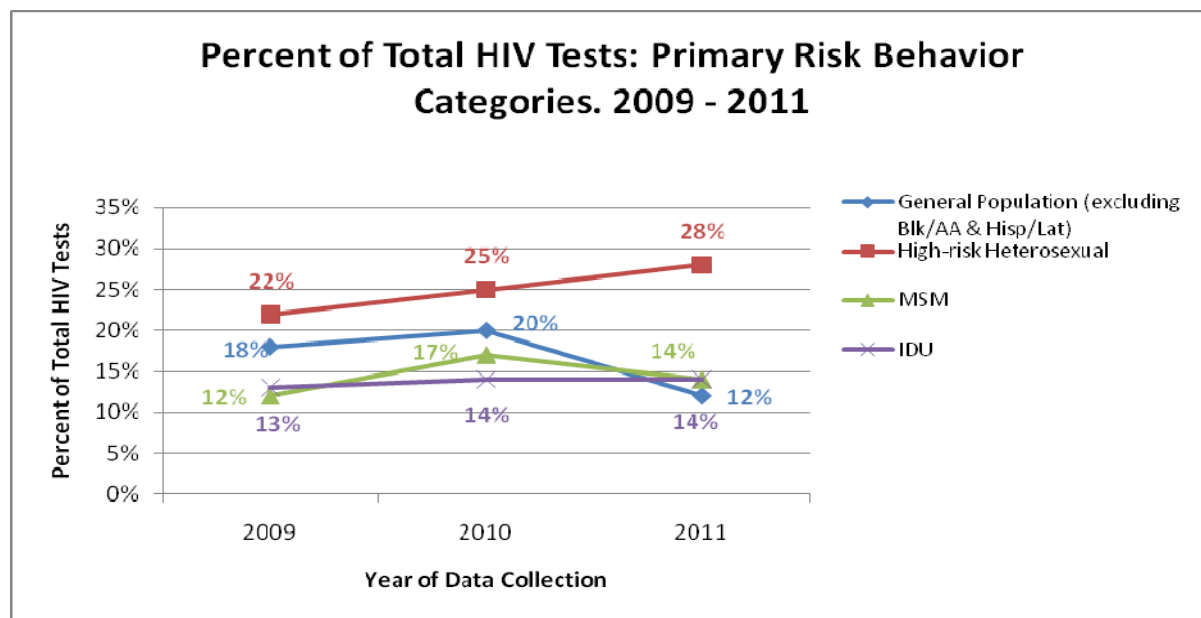
Counseling, testing, and referral agencies reported barriers to reaching higher numbers of MSM. The most frequently cited barriers included: boredom with the HIV/AIDS message, the perception that it is no longer a “life-sentence” disease, and the number of men who do not willingly disclose MSM behavior and/or do not identify as MSM.

Agencies also reported barriers to reaching higher numbers of IDUs. The predominant barrier reported for IDUs is the issue of trust that there will not be legal repercussions of disclosing injection drug use.

The number of HRH receiving HIV tests has remained somewhat steady. High-risk heterosexuals accounted for approximately 22% of all testing at IDPH-funded sites in 2009. This increased slightly to 25% in 2010 and to 28% in 2011. Testing of clients from the General Population (excluding Black/African American and Hispanic clients) has decreased as IDPH-testing sites have focused outreach testing efforts on high-risk populations. In 2009, 52% of all HIV tests conducted were among General Population clients. This decreased to 43% in 2010 and 42% in 2011. Hispanic/Latino and Black/African American clients made up 66% of the General Population in 2009, 52% in 2010, and 72% in 2011. In 2011, of the 5,842 HIV tests conducted, less than 12% of clients were considered part of the low-risk General Population, excluding Black/African American or Hispanic clients.

Figure 6 demonstrates patterns of risk behavior of the four major risk categories from 2009 through 2011: All MSM, All IDU, HRH, and non-prioritized General Population (GP), excluding Black/African American and Hispanic/Latino.

**Figure 6**  
**Percent of Total HIV Tests: Primary Risk Behavior Categories- 2009 through 2011**



### Delays in Testing

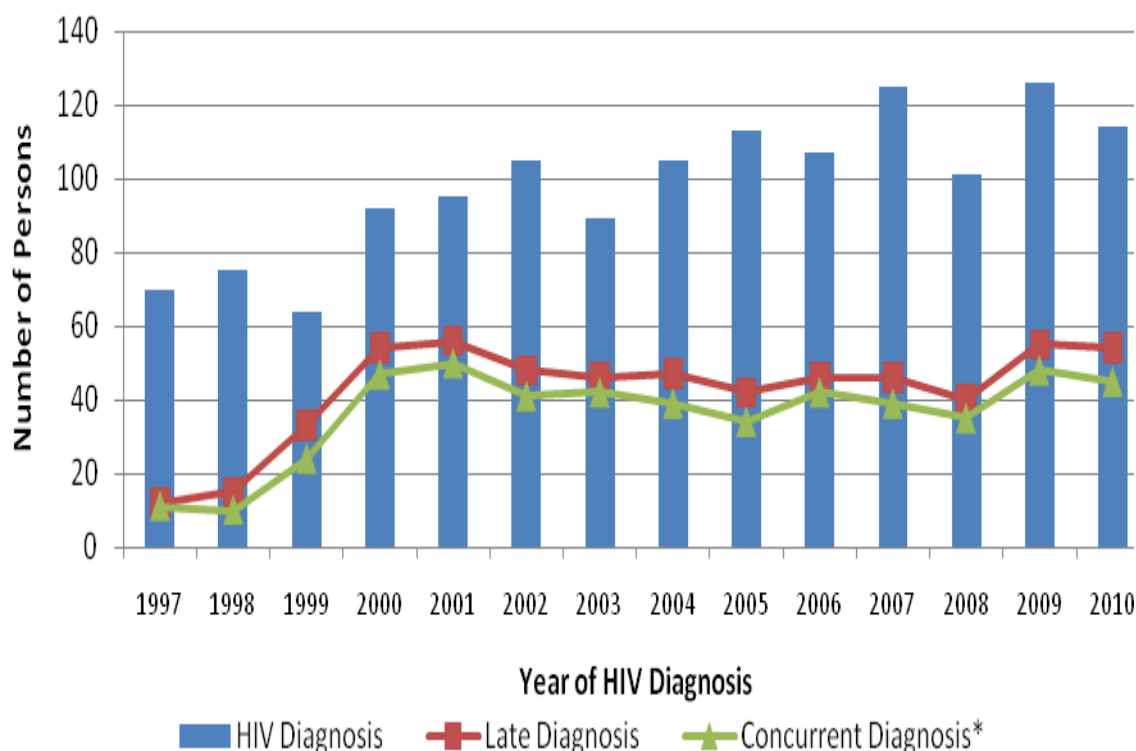
Although time of infection is generally not known, the length of time between HIV diagnosis and AIDS diagnosis can be used to give a general idea of how far along in the course of the disease a person is when the first HIV diagnosis is made. A short period of time between HIV diagnosis and AIDS diagnosis suggests that a person may have been infected for quite some time. People



with early HIV diagnoses (i.e., soon after infection) generally have longer time spans between HIV diagnosis and AIDS diagnosis. In general, if they get into treatment quickly, respond well to therapy, and adhere to treatment regimens, they may never be diagnosed with AIDS, or would at least have a longer time from HIV diagnosis to AIDS diagnosis.

Figure 7 shows the number of late diagnoses among persons diagnosed with HIV from 1997 to 2010. Late diagnosis is defined as a diagnosis of AIDS within 12 months of initial HIV diagnosis; and concurrent late diagnosis is AIDS diagnosis within one month of HIV diagnosis. After declining steadily since 2001, the numbers of late diagnoses have increased from 2008 to 2010. More than 80% of all late diagnoses in Iowa from 2000 to 2010 have been concurrent diagnoses.

**Figure 7**  
**Total HIV Diagnoses<sup>1</sup>, Late HIV Diagnoses<sup>2</sup>, and Concurrent AIDS Diagnoses\***  
**1997 through 2010**



<sup>1</sup> Includes all persons reported to have tested positive for HIV for the first time while a resident of Iowa, regardless of current diagnosis (HIV or AIDS).

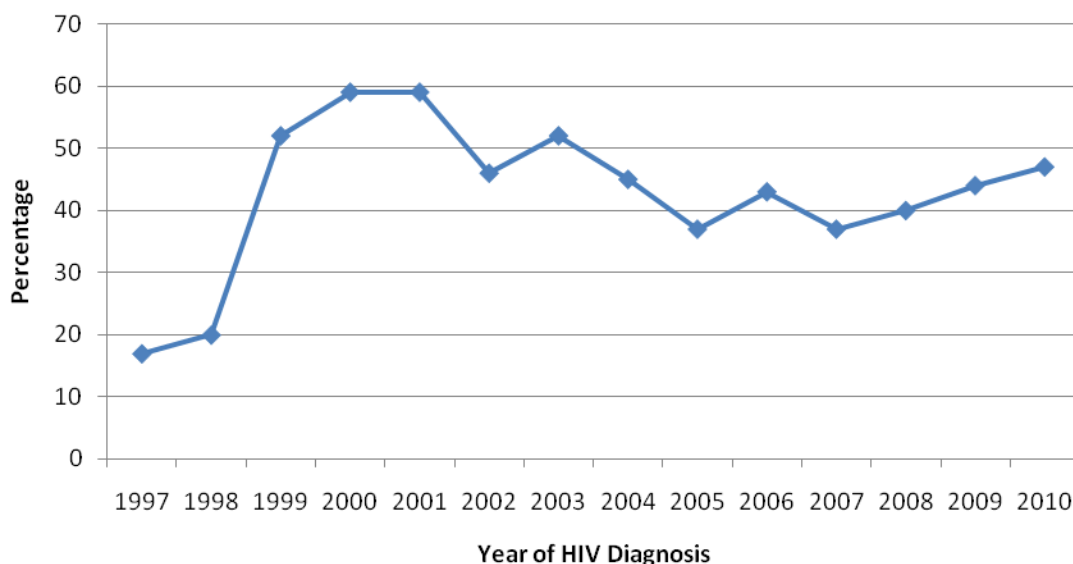
<sup>2</sup> Includes all persons reported to have tested positive for HIV for the first time while a resident in Iowa who were also diagnosed with AIDS with 12 months of their initial HIV diagnosis.

\* Includes all persons with late diagnosis whose AIDS diagnosis was within one month of their initial HIV diagnosis.

Figure 8 shows the percentage of people diagnosed with HIV in a given year who were diagnosed with AIDS within 12 months of their initial HIV diagnosis. Such persons are often referred to as “late testers.” A high percentage of late testers suggests that many people are being diagnosed with HIV late in the course of their infection. A low percentage suggests that persons were diagnosed early in the course of infection or that they received treatment promptly and did not progress to AIDS within a year.



**Figure 8**  
**Percentage of Persons with a Late Diagnosis of HIV<sup>1</sup>**  
**1997 through 2010**



<sup>1</sup> Percentage of all persons diagnosed with HIV for the first time while a resident of Iowa who received an AIDS diagnosis within 12 months of their initial HIV diagnosis.

The percentage of persons with less than one year from HIV diagnosis to AIDS fell from a peak of 59% in 2000 to a new low of 37% in 2005. This may have been due to people seeking testing earlier in the course of their infection and/or due to the effect of antiretroviral therapies that first became available in 1995. Unfortunately, the percentage has been trending steadily upward since 2007. The upswing may be due to a failure of prevention. It could also be due in part to more people seeking care for health conditions for which health care providers suspected HIV might be a contributing factor.

The amount of time from initial infection with HIV to meeting a definition of AIDS is 9 to 10 years, on average, when the infection is untreated. Nationally, 32% of persons diagnosed in 2009 were late testers<sup>1</sup>. The rising number of late testers in Iowa is a cause for concern, especially for minorities. According to a CDC study, late testers are more likely to be heterosexual, have lower education levels, and be members of racial and ethnic minorities<sup>2</sup>. Across the United States, minorities are much less likely to access health care in a timely manner and often enter the system when their medical conditions are more complicated and pronounced<sup>3</sup>. Late testing is associated with poorer health outcomes and earlier deaths. Late testers benefit less from antiretroviral therapy, and have more opportunities to spread HIV to others.

<sup>1</sup> Centers for Disease Control and Prevention. *HIV Surveillance Report, 2010*; Vol. 22. <http://www.cdc.gov/hiv/topics/surveillance/reports/>. Published March 2012. Accessed September 2012.

<sup>2</sup> Late Versus Early Testing of HIV – 16 Sites, United States, 2000-2003. CDC. MMWR 2003;52(25);581-586

<sup>3</sup> African Americans in Iowa: A Snapshot of Health Disparity Issues, University of Northern Iowa Project EXPORT and New Iowans Program.

### Immigration of HIV-Positive Persons to Iowa

Immigration of HIV-positive persons to the United States may have a substantial impact on data trends and interpretation of those trends. According to CDC guidelines, diagnoses of HIV infection that occur outside of the United States or its territories are not recognized by the surveillance system. Thus, immigrants with previously documented diagnoses are counted by the place of residence at time of first test or treatment *within the United States*. Therefore, such persons when diagnosed as residents of Iowa are counted among Iowa's new HIV diagnoses. Since immigration status is not collected on case report forms or in interviews, illegal or undocumented immigrants may also be diagnosed as residents of Iowa.

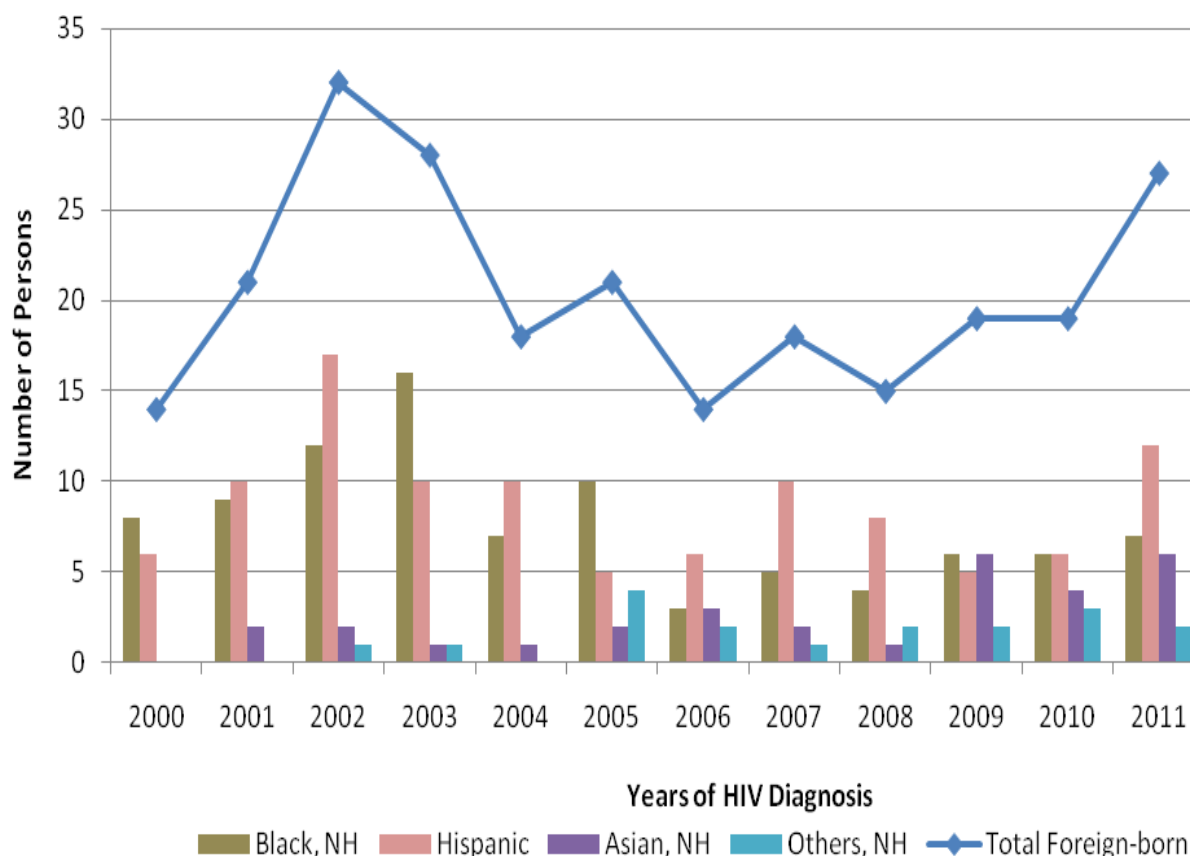
Section 212(a)(1)(A)(i) of the Immigration and Nationality Act (the Act), bars the admission to the United States of any foreign national who has been diagnosed with certain specific illnesses. The Department of Health and Human Services (HHS), on November 2, 2009, published a final rule in the Federal Register, removing HIV infection from the list of illnesses that make a foreign national inadmissible. This rule took effect on January 4, 2010.

Prior to January 4, 2010, the Act rendered inadmissible any applicant for a visa or admission to the United States who had HIV. However, a number of waivers of inadmissibility were available for humanitarian and family unit concerns. HIV-infected persons admitted on such waivers were counted as new Iowa diagnoses if, after entering the U.S., they resettled in Iowa and first received testing or treatment here.

Figure 9 shows the number of diagnoses of HIV infection for persons in Iowa who were born in foreign countries. Country of origin is collected on the confidential case report form and can be used as an imperfect predictor of who is an immigrant. After peaking at 32 in 2002, the number of diagnoses among foreign-born persons in Iowa stabilized below 20 diagnoses annually. However, the number of diagnoses among the foreign born jumped from 19 in 2010 to 27 in 2011. Foreign born increased from 15% of total diagnosis in 2000 to 23% in 2011.

Black Africans and Hispanics together accounted for over 80% of all foreign-born diagnoses from 2000 to 2008. However, the number of foreign-born Asians diagnosed rose dramatically in 2009, surpassing foreign-born Hispanics and equaling foreign-born blacks, and has remained relatively high through 2011. Since peaking in 2002 and 2003 the numbers of diagnoses of foreign-born Hispanics and blacks has varied across time. Diagnoses among foreign-born blacks have risen steadily, from 4 in 2008 to 7 in 2011. Diagnoses among foreign-born Hispanics almost doubled, from 6 in 2010 to 12 in 2011, and accounted for 44% of all foreign-born diagnoses in 2011.

**Figure 9**  
**Diagnoses of HIV Infection in Foreign-born Persons in Iowa<sup>1</sup> by Race and Ethnicity**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all foreign-born persons whose first diagnosis of HIV (regardless of AIDS status) in the U.S. came as a resident of Iowa.

Other than HIV-positive refugees, it is not clear how many foreign-born persons immigrated with HIV or how many may have become infected while in the United States. If one assumes that foreign-born persons would be more likely to interact with persons from their country of origin than would a U.S-born person, immigrant populations from areas in the world where HIV is more prevalent may also have higher rates of infection within the United States. Under that assumption, prevalence of HIV in immigrant populations may reflect that of their home countries.

The region of origin for foreign-born persons diagnosed with HIV between 2007 and 2011 is shown in Table 5. Forty-eight percent were of Hispanic origin, 31% were African, and 22% were Asian. Almost 51% of foreign-born males were of Hispanic origin, and 50% of foreign-born females were of African descent.

**Table 5**  
**Region of Origin for Foreign-born Persons Diagnosed in Iowa<sup>1</sup>**  
**2007 through 2011**

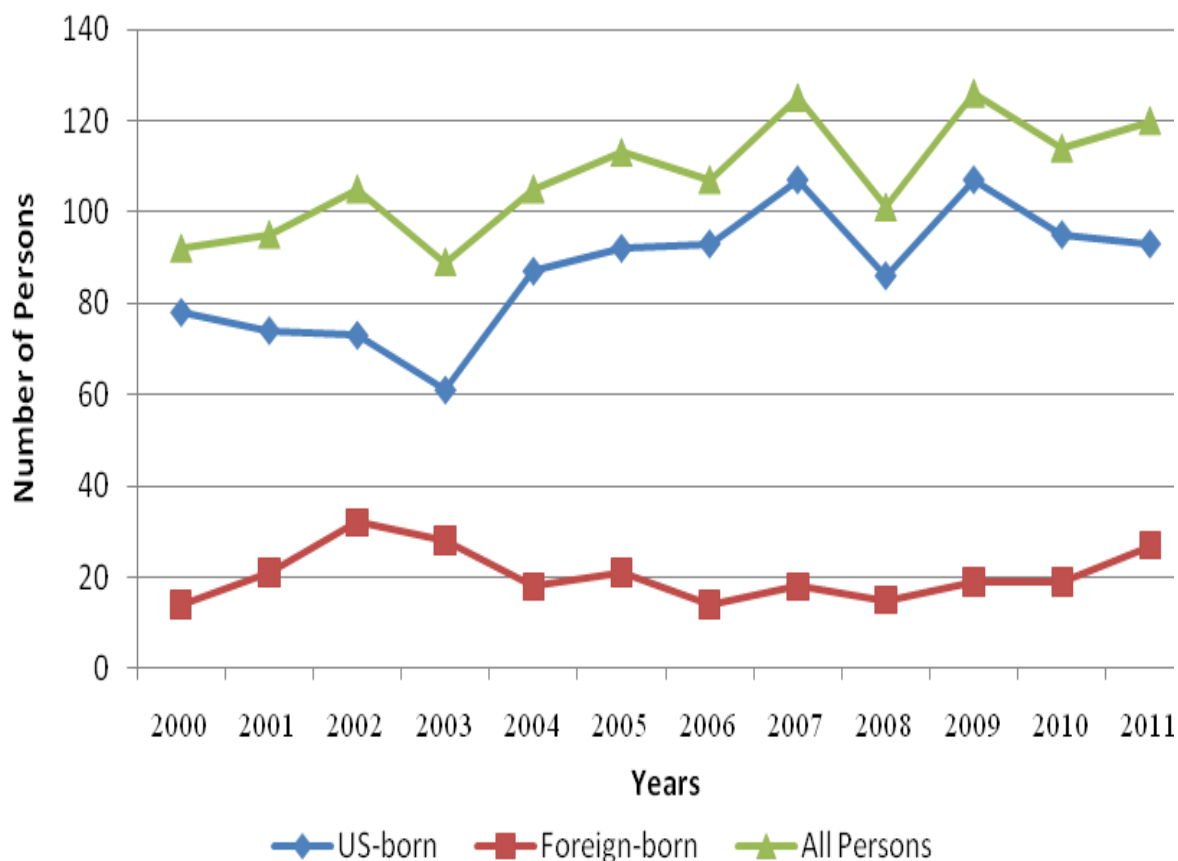
Region	Regional Totals		
	Males	Females	All
Central/South America/ Caribbean	37	4	39
Africa	10	14	24
Southeast Asia	18	6	24
Other	6	4	10
<b>All regions</b>	<b>71</b>	<b>28</b>	<b>97</b>

<sup>1</sup> HIV diagnoses reflect all foreign-born persons whose first diagnosis of HIV (regardless of AIDS status) in the U.S. came as a resident of Iowa.

Past increases in diagnoses among foreign-born persons have had some significant impacts on the interpretation of epidemiological data in Iowa. Most obviously, the numbers of diagnoses among U.S.-born persons may be misinterpreted, particularly those of African Americans and U.S.-born Hispanics. If the number of new diagnoses among foreign-born individuals remains constant or continues to decrease, the effect on the interpretation of the epidemic among U.S.-born persons in Iowa will be lessened.

Figure 10 demonstrates how the diagnosis curve for Iowa differs if foreign-born persons are plotted separately from U.S.-born persons. Increases seen in the number of new diagnoses in Iowa from 2000 to 2002 were due to increases in diagnoses among foreign-born persons. Diagnoses among U.S.-born persons declined continuously throughout this period. Increases in diagnoses seen from 2004 to 2009 were driven by diagnoses among U.S.-born persons, however.

**Figure 10**  
**Diagnoses of HIV Infection<sup>1</sup> in Iowa by Country of Origin**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

If foreign-born persons diagnosed in Iowa differ substantially from U.S.-born persons in terms of gender, race and ethnicity, risk or age then they will affect trends in overall diagnoses among these strata. For that reason, this profile will examine diagnoses among foreign-born persons separately as part of the interpretation of trends.

***Summary of Statewide HIV Data***

- The number of newly diagnosed HIV infections increased from 89 diagnoses in 2003 to 120 diagnoses in 2011. This increase is largely due to increases in diagnoses among U.S.-born persons.
- Between 2000 and 2002, the number of diagnoses among foreign-born persons in Iowa increased 128.5%. Since then, decreases in the number of diagnoses among the foreign born have been observed. Since 2000, 81% of foreign-born persons with HIV emigrated from Africa or Central and South America.
- Forty-seven percent of all persons diagnosed with HIV in 2010 were subsequently diagnosed with AIDS within one year of their HIV diagnosis, an increase from 37% in 2007. This may indicate that initial diagnosis is increasingly occurring years after infection. More than 80% of all late diagnoses from 2000 to 2010 are also concurrent diagnoses
- The number of HIV tests conducted at IDPH-funded test sites averaged 6,620 per year from 2009 through 2011. An average of 31 persons tested positive per year, a positivity rate of 0.47%.

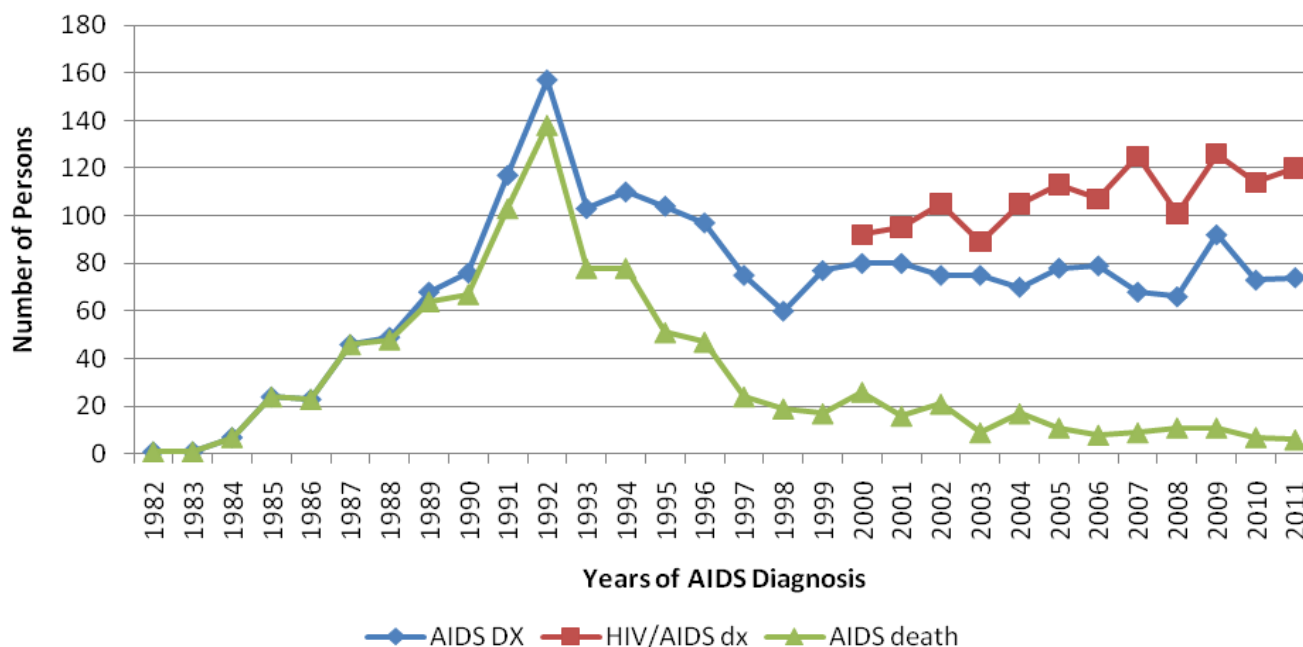
**Diagnoses of AIDS**

The number of Iowa's AIDS diagnoses, based on residence in Iowa as of the date the person first met the CDC surveillance case definition for AIDS, and the number of deaths of persons with HIV/AIDS are presented in Figure 11 and Table 6.

In Iowa, AIDS diagnoses peaked in 1992 (Figure 11). Changes in the definition of AIDS occurred in 1985, 1987, and 1992 (see Core HIV/AIDS Surveillance under Data Sources at the beginning of this chapter). Each change in definition increased the number of diagnoses that year. The major increase in diagnoses in 1992 is largely explained by the inclusion of CD4+ cell counts below 200 cells per microliter of serum (or less than 14% of total lymphocytes) as AIDS-defining conditions, but it also represents a peak in the epidemic. This is indicated by a continuous decrease in the number of cases diagnosed through 1998, and a relatively stable trend since then.

This decrease probably represents an actual decline in the number of AIDS cases rather than an artifact of reporting or a consequence of the change in definition described previously. A factor contributing to this downward trend was the use of combination antiretroviral therapy to slow HIV disease progression to AIDS. The decrease in AIDS diagnoses did not correlate with a significant decrease in new HIV diagnoses, and therefore is due almost entirely to treatment advances rather than to a decrease in new infections of HIV.

**Figure 11**  
**Iowa HIV/AIDS Diagnosis<sup>1</sup>, AIDS Diagnoses<sup>2</sup>,**  
**and Deaths among Persons with HIV Disease<sup>3</sup>**  
**1982 through 2011**



<sup>1</sup> Includes all persons newly diagnosed with an infection of HIV while residing in Iowa

<sup>2</sup> Includes all persons newly diagnosed with a condition of AIDS while residing in Iowa

<sup>3</sup> Reported deaths of persons with AIDS were not necessarily related to HIV infection. Deaths of persons with HIV (not AIDS) are included.

Since 1998, the number of AIDS diagnoses has been relatively stable. In 2011, there were 74 new diagnoses of AIDS about the same as 2010 and close to the 5-year and 10-year averages of 76 cases. When compared to the higher numbers of diagnoses in earlier years, the 10-year average may indicate that persons diagnosed with HIV are engaged in primary medical care and are receiving highly active antiretroviral therapy (HAART). While acknowledging the impact of HAART, another interpretation might be that the 10-year average could have been much lower were it not for a high percentage (more than 40%) of late testers, persons whose HIV disease was not diagnosed until their immune systems had been compromised to the point where HIV and AIDS were either diagnosed concurrently or within a year of each other.

The sharp decline in deaths of persons with AIDS after 1995 (Figure 11) indicates the success of HAART. Deaths declined until 1999, when 17 deaths were reported. Deaths rebounded somewhat after 1999 but generally declined again after a peak of 26 deaths in 2000. The rebound that occurred between 1999 and 2002 may indicate that while HAART therapy was initially effective for some people, it may have only delayed death for a period of time for those who were late in the course of the disease.

**Table 6**  
**Iowa AIDS Diagnoses and Deaths of Persons with AIDS<sup>1</sup>**  
**by Year of Diagnosis or Death**

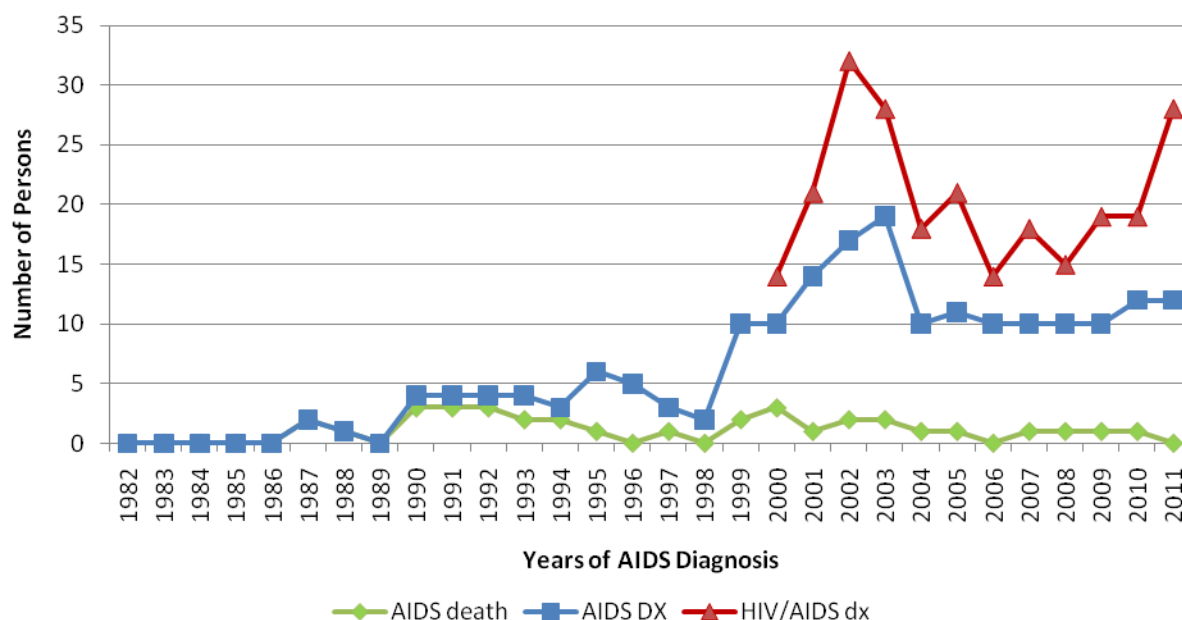
<b>Year</b>	<b>AIDS Diagnoses</b>	<b>Deaths</b>
1982	1	1
1983	1	1
1984	7	7
1985	24	24
1986	23	23
1987	46	46
1988	49	48
1989	68	64
1990	76	67
1991	117	103
1992	157	138
1993	103	78
1994	110	78
1995	104	51
1996	97	47
1997	75	24
1998	60	19
1999	77	17
2000	80	26
2001	80	16
2002	75	21
2003	75	9
2004	70	17
2005	78	11
2006	79	8
2007	68	9
2008	66	11
2009	92	11
2010	73	7
2011	74	6
<b>Total</b>	<b>2,105</b>	<b>988</b>

<sup>1</sup> Reported deaths of persons with AIDS were not necessarily related to HIV infection. Deaths of persons with HIV (not AIDS) are included.

There was a dramatic increase in the number of foreign-born persons who were diagnosed with AIDS in Iowa from 1998 to 2003. Figure 12 shows the number of diagnoses of AIDS among foreign-born persons in Iowa since 1982. In 2003, 25% of all AIDS diagnoses were among foreign-born persons. Since 2000, 145 foreign-born persons have been diagnosed with AIDS in Iowa. Ninety-six (66%) of these persons were male.



**Figure 12**  
**Diagnoses of HIV/AIDS<sup>1</sup>, AIDS<sup>2</sup> and Deaths<sup>3</sup> among Foreign-born Persons in Iowa**  
**1982 through 2011**



<sup>1</sup> Includes all persons newly diagnosed with an infection of HIV while residing in Iowa

<sup>2</sup> Includes all persons newly diagnosed with a condition of AIDS while residing in Iowa

<sup>3</sup> Reported deaths of persons with AIDS were not necessarily related to HIV infection. Deaths of persons with HIV (not AIDS) are included.

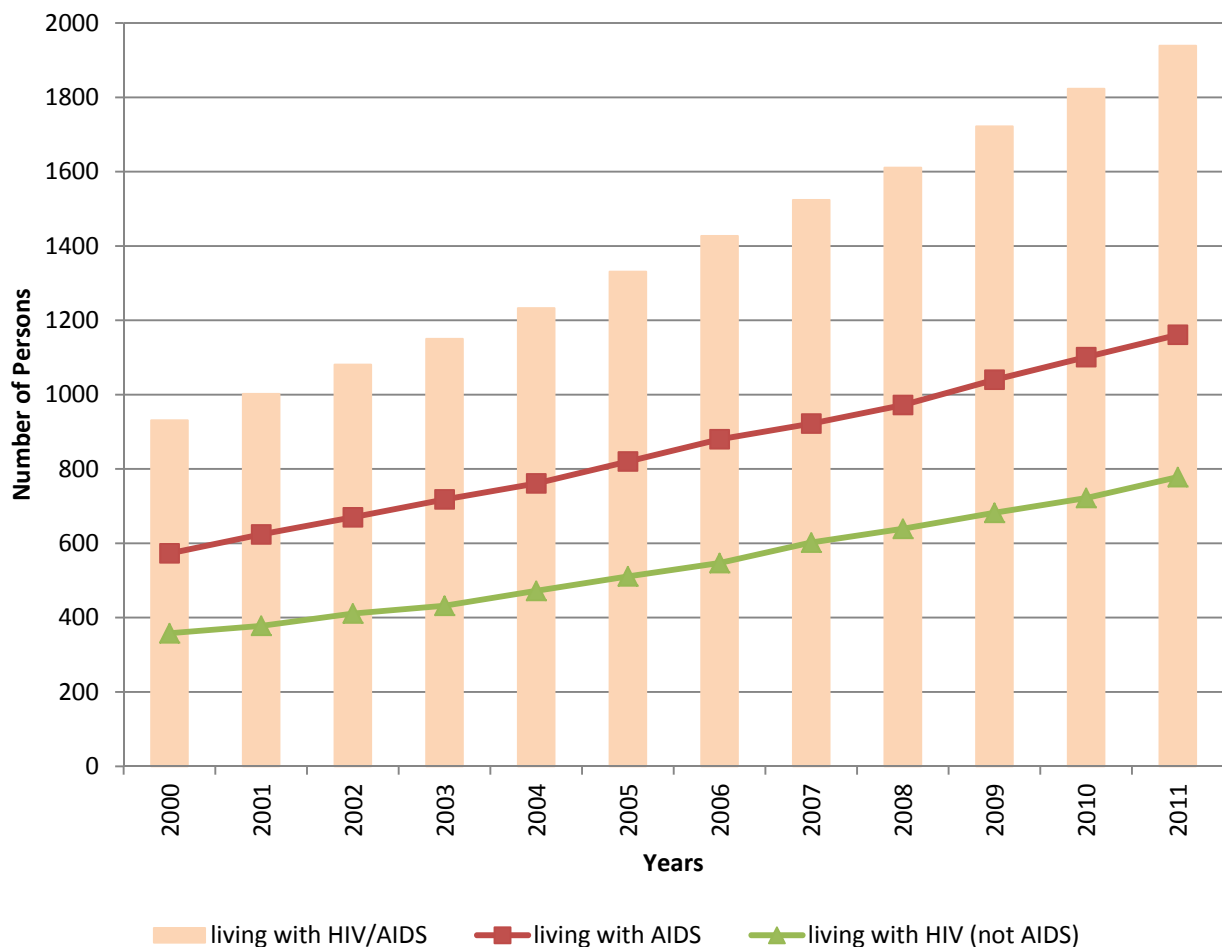
### ***Summary of Statewide AIDS Data***

- Diagnoses of AIDS peaked in 1992, coinciding with the change in definition of AIDS to include CD4+ cell counts less than 200 cells per microliter or less than 14% of total lymphocytes. The advent of highly active antiretroviral therapy (HAART) sparked a dramatic decline in diagnoses of AIDS from 1994 through 1998.
- After reaching a low in 1998, the number of diagnosed AIDS cases increased to an annual average of 76 cases from 1999 through 2011.
- Deaths of persons with AIDS declined from 1995 until 1999 when 17 deaths were reported. The number of deaths spiked to 26 in 2000 and this rebound may indicate that while HAART therapy was initially effective for some people, it may have only delayed death for a period of time for those who were late in the course of disease. Deaths continue to decline since the brief spike in 2000.
- The number of foreign-born persons diagnosed with AIDS in Iowa increased substantially between 1998 and 2003. Most of these persons were male. Since 2003, diagnoses of AIDS among foreign-born persons have decreased, averaging 11 diagnoses per year.

### Prevalence of HIV/AIDS

The decrease in deaths of persons with AIDS after 1994 combined with a relatively steady increase in the number of new HIV diagnoses have contributed to an increase in the number (prevalence) of persons living with HIV infection or AIDS (Figure 13). In the past ten years, the number of persons living with AIDS (persons diagnosed in Iowa) has increased significantly from 670 persons in 2002 to 1,161 persons in 2011. There were an additional 778 Iowa diagnosed persons living with HIV at the end of 2011 for a total of 1,939 persons living with HIV or AIDS as of December 31, 2011.

**Figure 13**  
**Number of Persons Living with a Diagnosis of HIV or AIDS<sup>1</sup>**  
**in Iowa as of December 31 of Each Year**

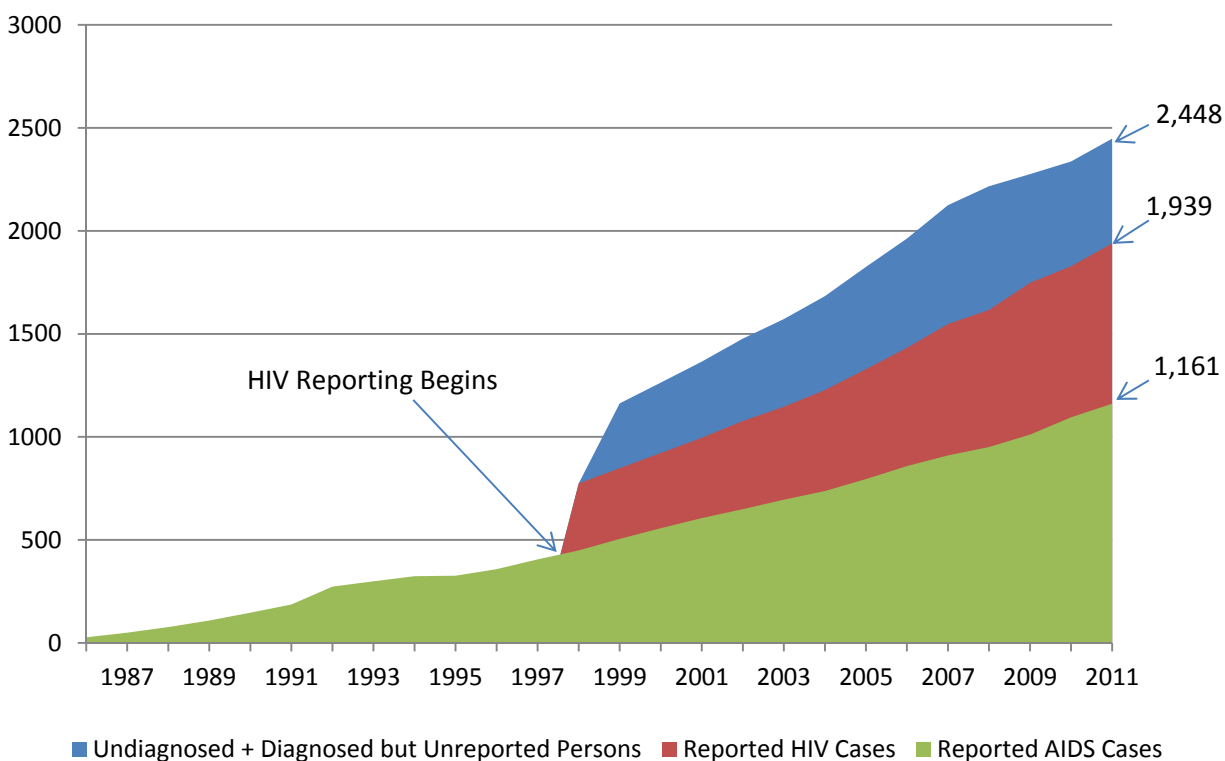


<sup>1</sup> Persons reported through December 31, 2011, as having HIV or AIDS and living in Iowa at the time of first diagnosis. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

## Estimated Prevalence

Not shown in Figure 13 are persons who are diagnosed but have not been reported, and persons who are infected with HIV but have not been diagnosed. Evaluations of the surveillance system with Centers for Disease Control and Prevention (CDC) SAS code indicate a 99% completeness Iowa's of HIV/AIDS data. CDC estimates that 20% of HIV-infected persons nationally are undiagnosed. In Iowa, this means there may be 485 persons HIV-infected persons who have not been diagnosed and 24 persons who have been diagnosed but are unreported. Adjusting the data for the 509 unreported and undiagnosed persons gives an HIV/AIDS prevalence estimate of 2,448 persons (Figure 14).

**Figure 14**  
**Estimated Number of Iowans Living with HIV or AIDS<sup>1</sup>**  
**as of December 31 of Each Year**



<sup>1</sup> Persons reported through December 31, 2011, as having HIV or AIDS and living in Iowa at time of first diagnosis.

Reporting of HIV began July 1, 1998. A person may be counted only once (as either HIV or AIDS) in a given year. All deaths may not have been reported.

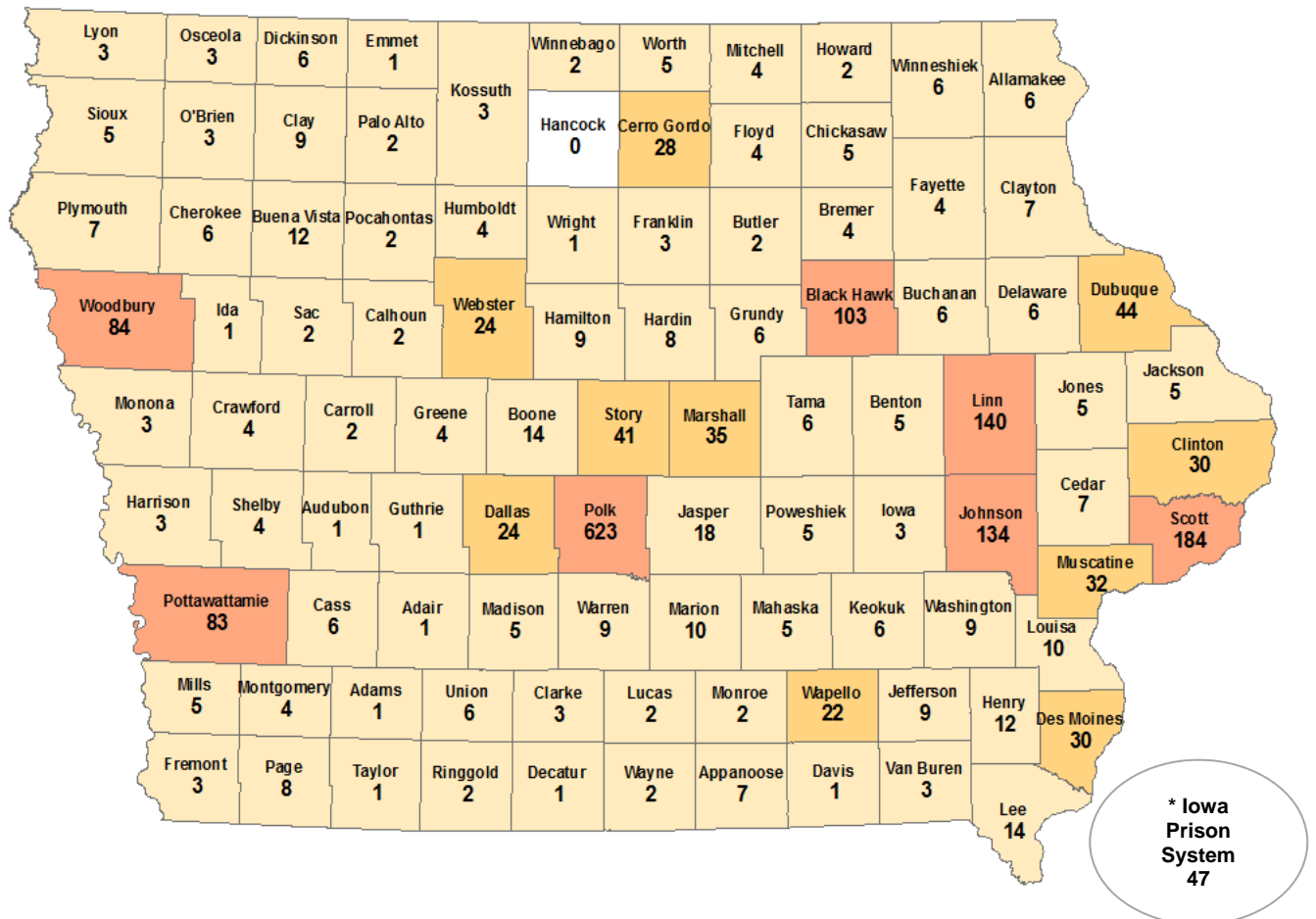
## Geographical Distribution of HIV and AIDS

Since reporting began in 1983, 98 of the 99 counties in Iowa have reported at least one HIV or AIDS case. While the ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story and Woodbury account for 50% of the total population,

71% of the 1,939 persons living with HIV or AIDS were diagnosed as residents of these counties (not including 66 persons diagnosed in state correctional facilities).

Figure 15 presents the geographical distribution of cumulative AIDS cases in Iowa. All persons first diagnosed with AIDS while a resident of Iowa since 1983 are shown.

**Figure 15**  
**Cumulative Iowa AIDS Diagnoses by County of Residence at the time of Diagnosis**  
**1982 through 2011**



**Total = 2,105 cumulative AIDS diagnoses**

Numbers include both living and deceased persons.

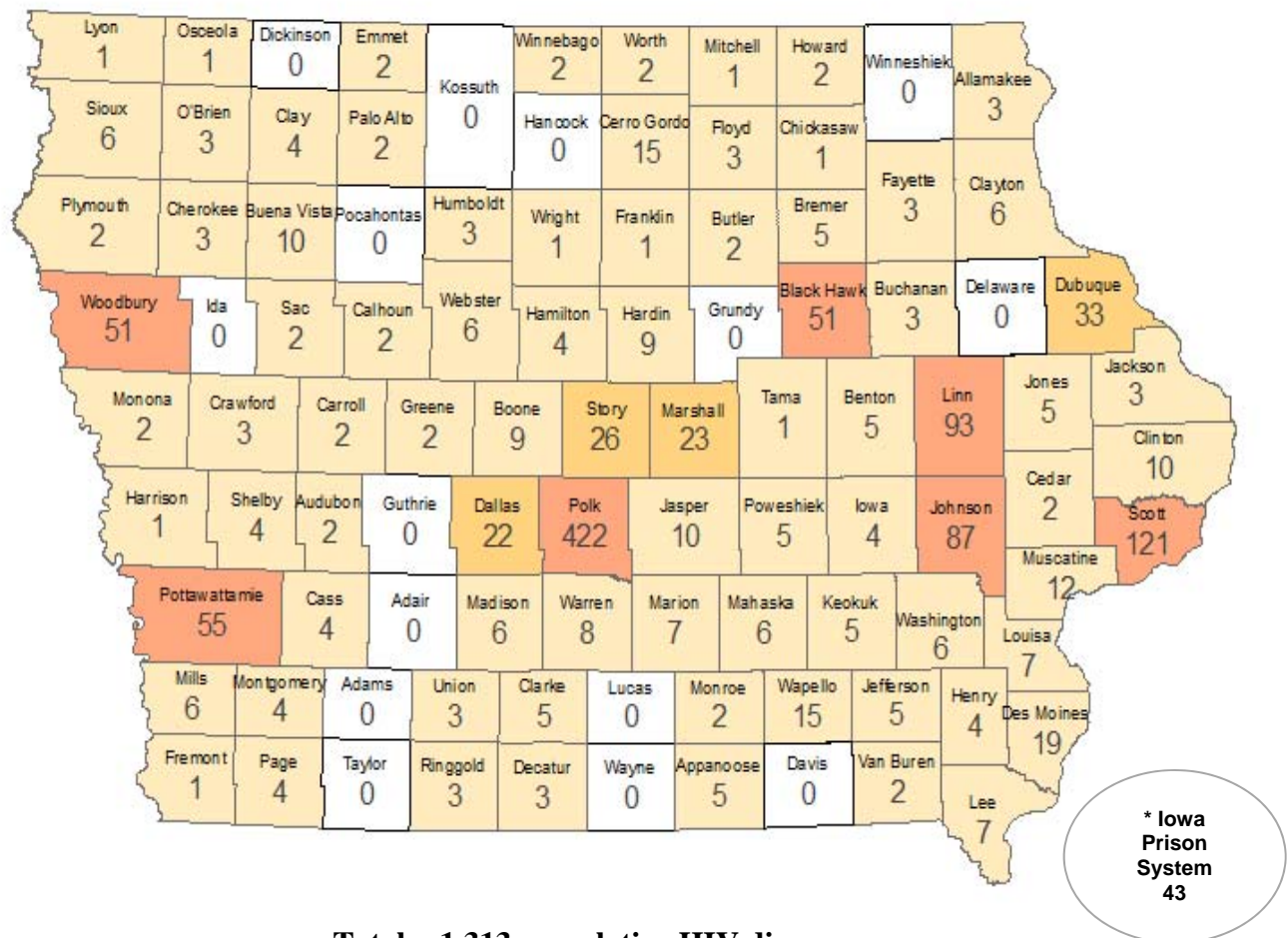
\*AIDS diagnoses in Iowa prisons are included in the overall total but not in county totals.

Counties with more than 20 and 80 diagnoses, respectively, are shaded differently.

Because HIV reporting was not implemented until July 1, 1998, Figure 15 represents only persons with AIDS diagnosis, a large number of who were diagnosed many years ago. Because it excludes HIV-infected persons whose condition has not progressed to AIDS, Figure 15 does not accurately reflect the geographical distribution of more recent HIV infection.

Figure 16 shows the cumulative distribution of persons first diagnosed with HIV disease (regardless of AIDS status) while residing in the state of Iowa from 1999 through 2011. Persons diagnosed while in Iowa prisons are included in the overall total but not in county totals.

**Figure 16**  
**Cumulative Diagnoses of HIV Disease<sup>1</sup> in Iowa by County of Residence at the time of Diagnosis**  
**1999 through 2011**



**Total = 1,313 cumulative HIV diagnoses**

Numbers include both living and deceased persons.

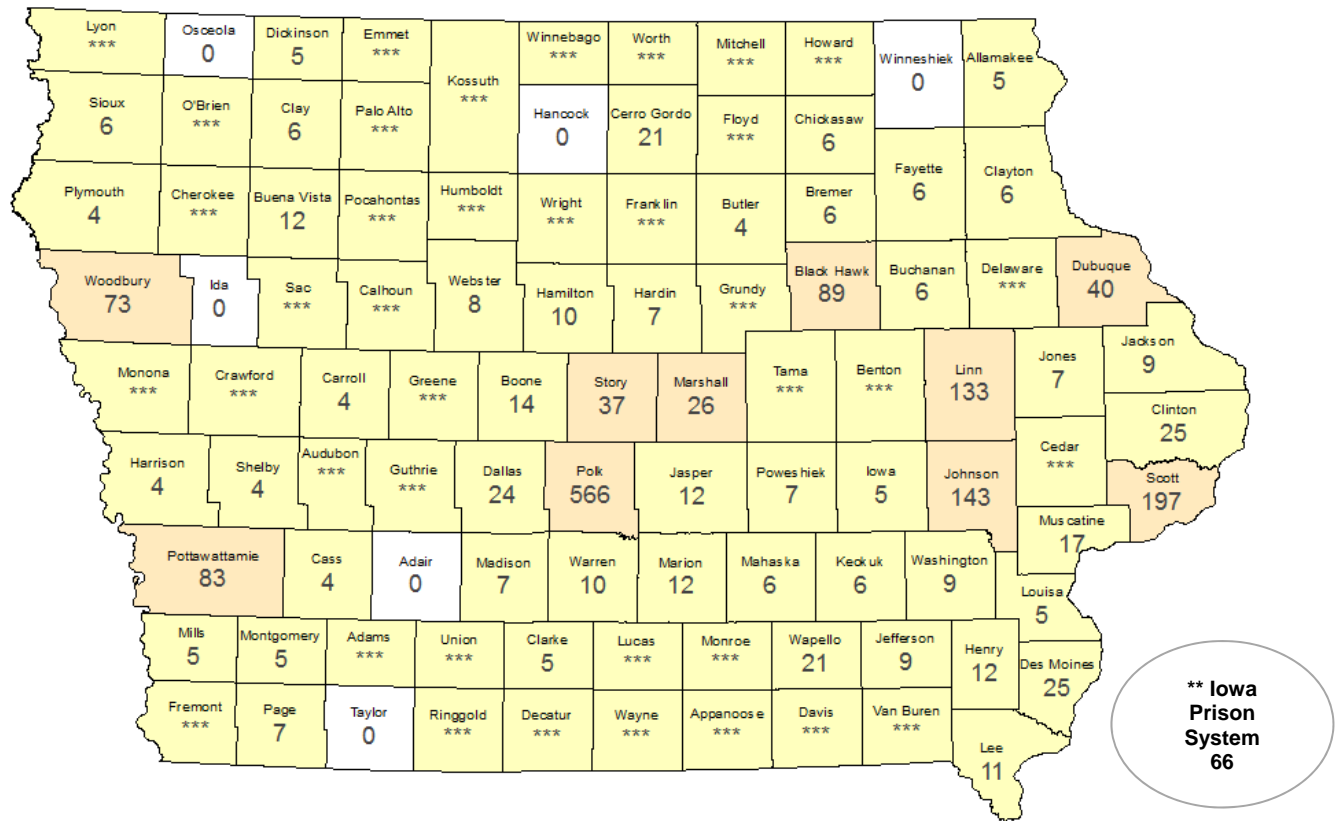
<sup>1</sup> Persons first diagnosed with HIV while residing in Iowa and who may or may not have progressed to AIDS.

\*Diagnoses in Iowa prisons are included in the overall total but not in county totals.

Counties with more than 20 and 80 diagnoses, respectively, are shaded differently.

A similar picture of the distribution of HIV diagnoses across counties emerges when deaths among HIV infected-persons are excluded from the tally. Figure 17 shows the distribution of all prevalent cases of HIV disease, that is, all living persons with HIV or AIDS as of December 31, 2011, who were first diagnosed with HIV or AIDS while living in Iowa. Cases are plotted according to county of residence at time of diagnosis of AIDS for AIDS cases, or of HIV for non-AIDS cases.

**Figure 17**  
**Persons Living with HIV or AIDS as of December 31, 2011**  
**by County of Residence at Time of Diagnosis of HIV or AIDS**



**Total Prevalence = 1,939 persons**

\*\* Diagnoses in the Iowa prison system are included in the overall total but not in county totals.

\*\*\* Indicates counties with between one and three persons living with HIV or AIDS. These persons are included in the total of 1,939 but are not shown on the map.

The darkest shading identifies the ten most populous counties in terms of their general population.

Figure 17 shows a high concentration of HIV and AIDS diagnoses among residents Iowa's ten most populous counties. The concentration of infection in these counties is further shown by calculating the number of HIV-infected persons per 100,000 persons in the general population of each county. Table 7 and Figure 18 show the prevalence by county of persons living with HIV or AIDS as of December 31, 2011, for selected counties. The statewide prevalence of persons living with HIV or AIDS is 64 persons per 100,000 population. The ten most populous counties have an average prevalence (91 per 100,000) almost three times the average prevalence (32 per 100,000) of the other 89 counties.

Polk County, which includes Des Moines, Iowa's capital city, has the highest prevalence, 131 persons per 100,000 population. Scott County, with the major cities of Davenport and Bettendorf in eastern Iowa, ranks second at 119 persons per 100,000 population. Johnson County, the location of the University of Iowa and the Iowa City/Coralville metropolitan area, has the third highest prevalence, 109 per 100,000 population. Polk, Scott, Johnson, Pottawattamie, Black Hawk, and Woodbury counties have the highest prevalence among the ten most populous counties. Story, Linn, Dallas, and Dubuque counties differ from the other six

most populous counties in that their prevalence is lower than the state average of 64 persons per 100,000 population. In all, eight counties have prevalence rates higher than the state average. Six of these are the counties with highest prevalence among the ten most populous counties, each reporting more than 70 persons living with HIV or AIDS. The other two are Marshall and Hamilton which reported 26 and 10 persons, respectively, living with HIV or AIDS. Counties with five or fewer persons living with HIV or AIDS are not shown in Table 7. Rate calculations in counties with fewer than 12 persons living with HIV or AIDS cases should be interpreted with great caution as the rates are considered to be very unstable.

**Table 7**  
**Prevalence<sup>1</sup> of HIV or AIDS by County<sup>2</sup> as of December 31, 2011**

County	Number of Persons	2010 Census Population	Prevalence (Per 100,000 pop.)
*Polk	566	430,640	131
*Scott	197	165,224	119
*Johnson	143	130,882	109
*Pottawattamie	83	93,158	89
*Woodbury	73	102,172	71
*Black Hawk	89	131,090	68
Marshall	26	40,648	64
Hamilton	10	15,673	64
*Linn	133	211,226	63
Des Moines	25	40,325	62
Henry	12	20,145	60
Buena Vista	12	20,260	59
Wapello	21	35,625	59
Keokuk	6	10,511	57
Jefferson	9	16,843	53
Boone	14	26,306	53
Clinton	25	49,116	51
Chickasaw	6	12,439	48
Cerro Gordo	21	44,151	48
Jackson	9	19,848	45
Madison	7	15,679	45
Page	7	15,932	44
*Dubuque	40	93,653	43
Washington	9	21,704	41
*Story	37	89,542	41
Hardin	7	17,534	40
Muscatine	17	42,745	40
Poweshiek	7	18,914	37
*Dallas	24	66,135	36
Marion	12	33,309	36
Clay	6	16,667	36
Jones	7	20,638	34
Clayton	6	18,129	33
Jasper	12	36,842	33
Lee	11	35,862	31
Fayette	6	20,880	29
Buchanan	6	20,958	29
Mahaska	6	22,381	27
Bremer	6	24,276	25
Warren	10	46,225	22
Webster	8	38,013	21
Sioux	6	33,704	18
Counties with < 6 persons	136	....	....
Prison System	66	....	....
<b>Total ten most populous</b>	<b>1,385</b>	<b>1,513,722</b>	<b>91</b>
<b>Total all other counties</b>	<b>488</b>	<b>1,532,633</b>	<b>32</b>
<b>State total</b>	<b>1,939</b>	<b>3,046,355</b>	<b>64</b>

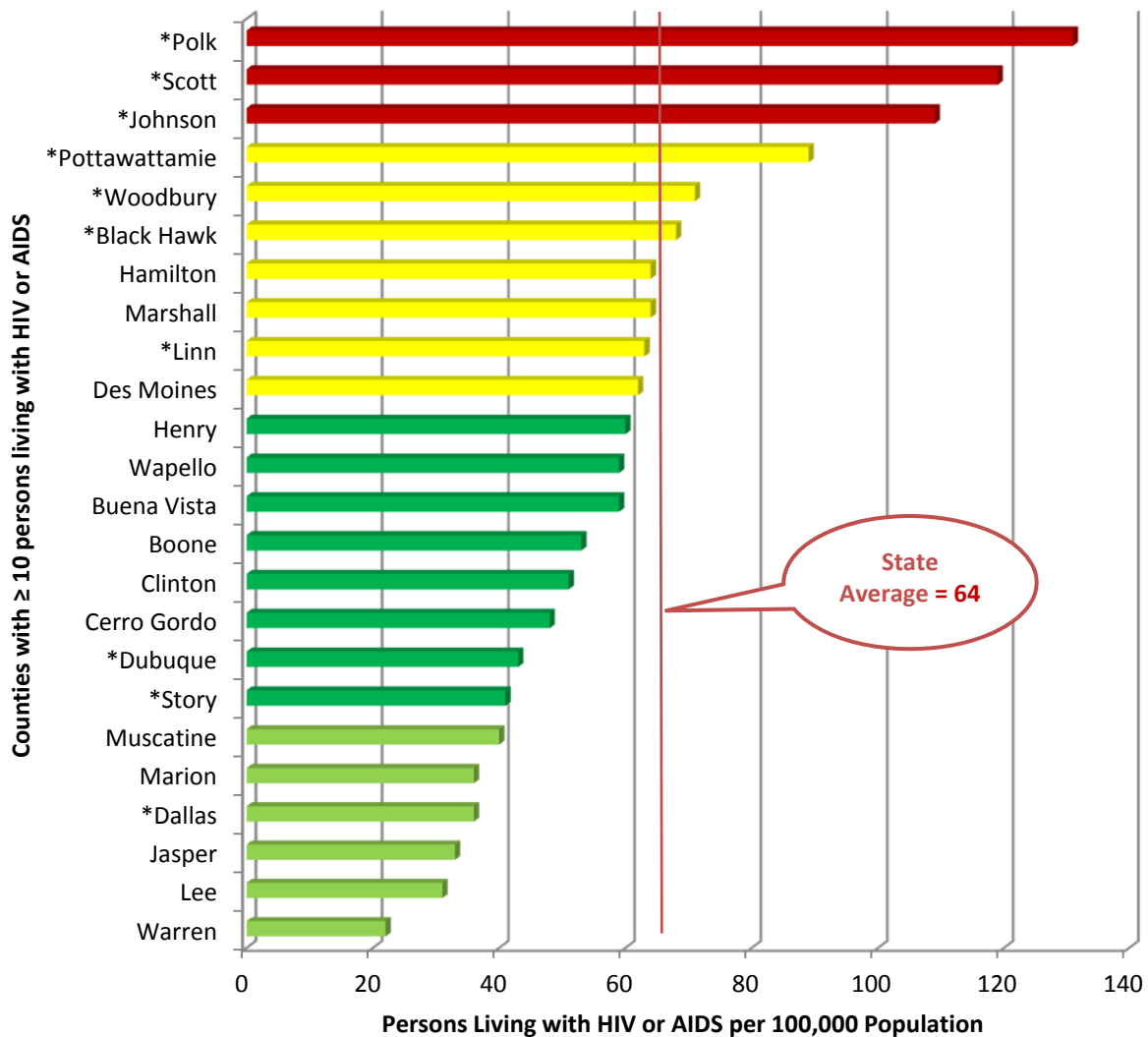
<sup>1</sup>Persons living with a diagnosis of HIV or AIDS. All deaths may not have been reported

<sup>2</sup>Only counties with more than 5 cases are included. \*The most populous counties are indicated with asterisks.

<sup>3</sup>Sixty-six persons were diagnosed while in correctional facilities. These persons are listed under the prison system and are included in the state total, but are not included in the county data or the county totals.



Figure 18

Prevalence<sup>1</sup> of HIV and AIDS for County<sup>2</sup> as of December 31, 2011

<sup>1</sup> Persons living HIV or AIDS (PLWHA) per 100,000 population. All deaths may not have been reported.

<sup>2</sup> Only counties with 10 or more PLWHA are included. \*The 10 most populous counties are indicated with asterisks.



***Summary of HIV/AIDS Prevalence Data***

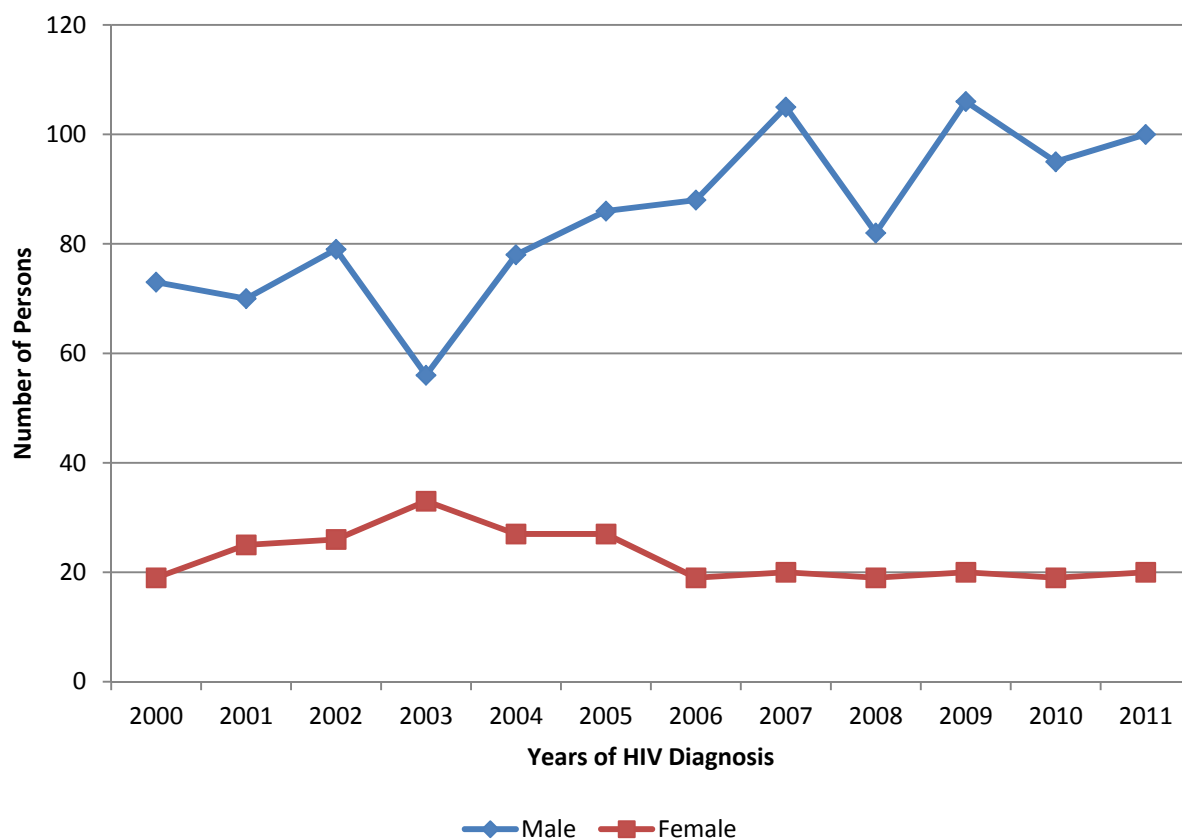
- The number of Iowans living with HIV or AIDS continues to increase. There were 1,939 Iowans living with HIV or AIDS as of December 31, 2011, an increase of 340 persons since December 31, 2008.
- As of December 31, 2011, there were 64 persons living with HIV or AIDS per 100,000 population in Iowa. This was an increase of 10.7 persons per 100,000 from 2008. This is due largely to a slowing in HIV/AIDS deaths and recent increases in the number of newly diagnosed HIV disease cases.
- While the ten most populous counties of Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury account for 50% of the total population of Iowa, 71% of persons living with HIV or AIDS were diagnosed as residents of those counties.
- Among the ten most populous counties, Polk, Scott, Johnson, Pottawattamie, Black Hawk, and Woodbury counties have the highest prevalences of persons living with HIV or AIDS. Story, Linn, Dallas, and Dubuque counties have prevalences below the average for the state.

## GENDER AND AGE

### Gender – HIV Diagnoses

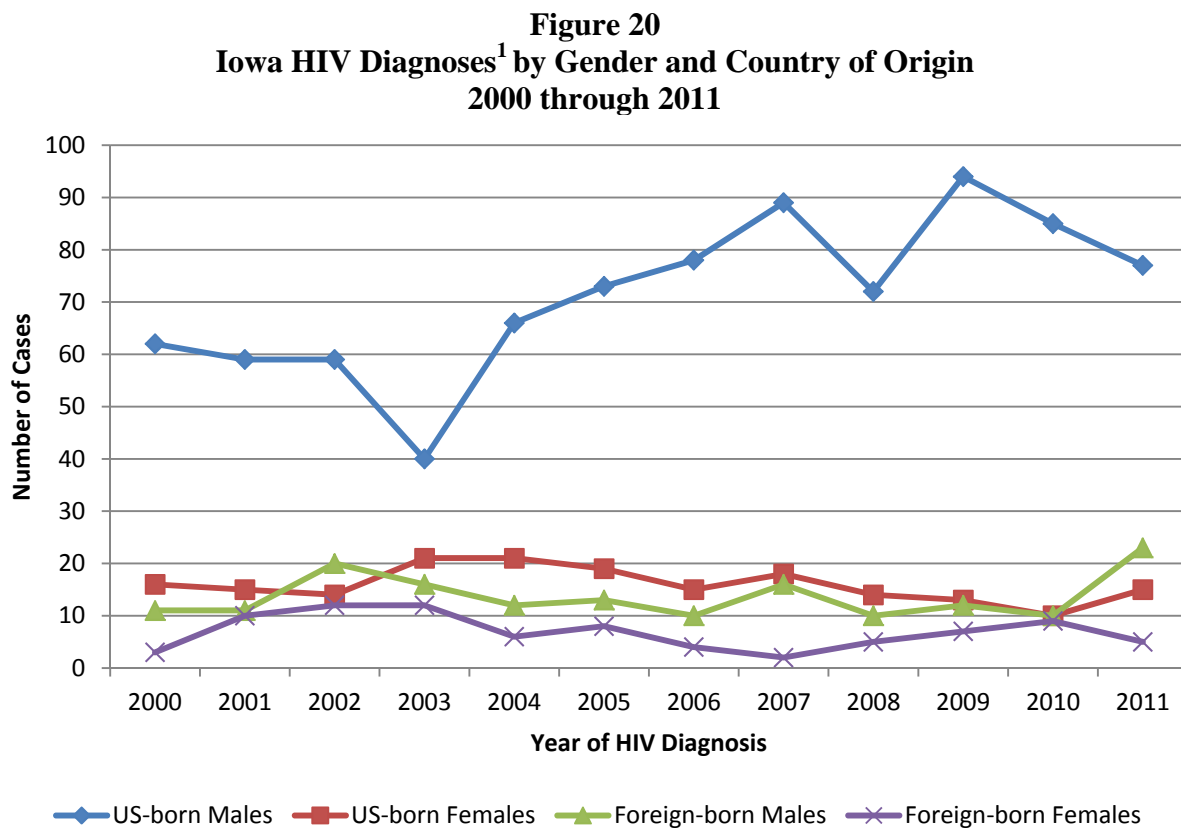
Figure 19 shows the number of HIV diagnoses by gender. Males have historically accounted for the largest proportion of new cases and they continue to do so. Trends among males and females differ significantly, however. The numbers of newly diagnosed HIV cases in males decreased sharply from 2002 to 2003, and then have generally trended upward since. Diagnoses among females slowly increased from 2000 to 2003 but have been decreasing since 2003. Most importantly, the recent increases in HIV diagnoses overall (Figure 3, above) are explained by increased diagnoses among males.

**Figure 19**  
**Iowa HIV Diagnoses<sup>1</sup> by Gender**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Increases in the numbers of foreign-born persons being diagnosed with HIV in Iowa have had an impact on the trends in diagnoses by gender. Diagnoses of HIV among U.S.-born and foreign-born persons by gender are shown in Figure 20.



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Separating U.S.-born cases from foreign-born cases makes the interpretation of trends a bit easier. Diagnoses among males have generally increased since 2003. The increase in diagnoses among all males was due to increases in diagnoses among U.S.-born males only. Diagnoses among foreign-born males have remained fairly steady since 2003, but increased sharply from 2010 to 2011, surpassing diagnoses among U.S.-born females.

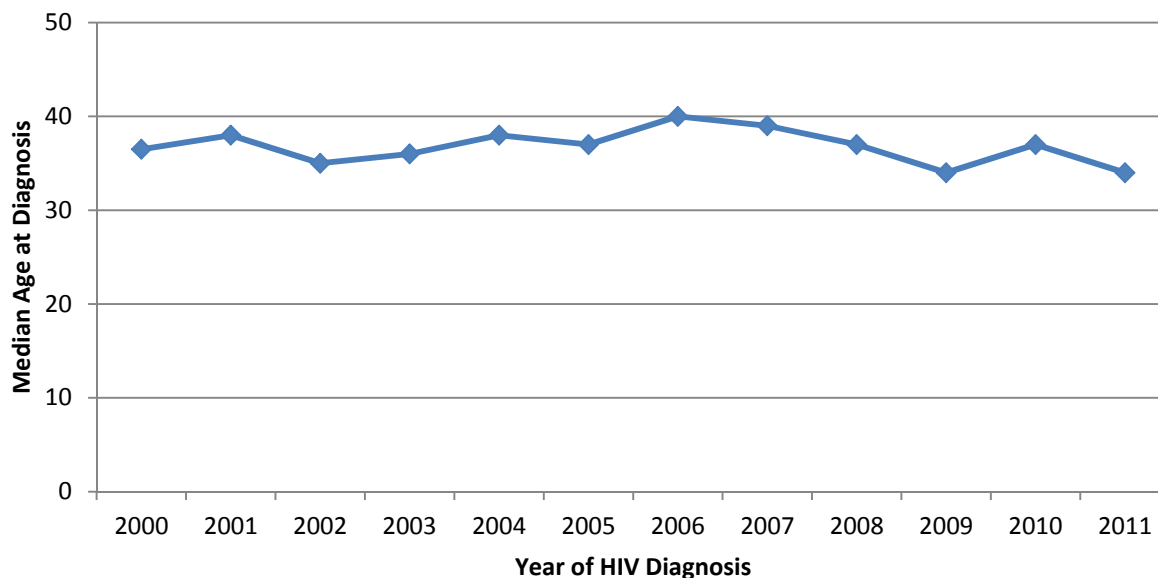
Among females, changes in the number of diagnoses are largely due to fluctuations in the number of foreign-born females being diagnosed. Diagnoses among foreign-born females increased from 2000 to 2003, decreased between 2003 and 2007, increased from 2007 to 2010, and decreased again in 2011. Diagnoses among U.S.-born females have changed little over the past 10 years.

### Age – HIV Diagnoses

A look at median age at HIV diagnosis in Iowa for the past ten years shows that the median age

at diagnosis has remained relatively steady, ranging from 34 to 40 years of age (Figure 21). The peak of 40 was reached in 2006 and has declined steadily to lows of 34 in both 2009 and 2011. Maximum age of 72 years at diagnosis of HIV was recorded in 2011 and 5 children below the age of 1 year were diagnosed between 2000 and 2011. Median age at diagnosis of HIV has remained below 40 years since 2006, reflecting an increase in HIV diagnoses among younger people especially those 13 to 24 years of age (Figure 22).

**Figure 21**  
**Median Age at Time of HIV Diagnosis<sup>1</sup> for all Iowa Cases**  
**2000 through 2011**

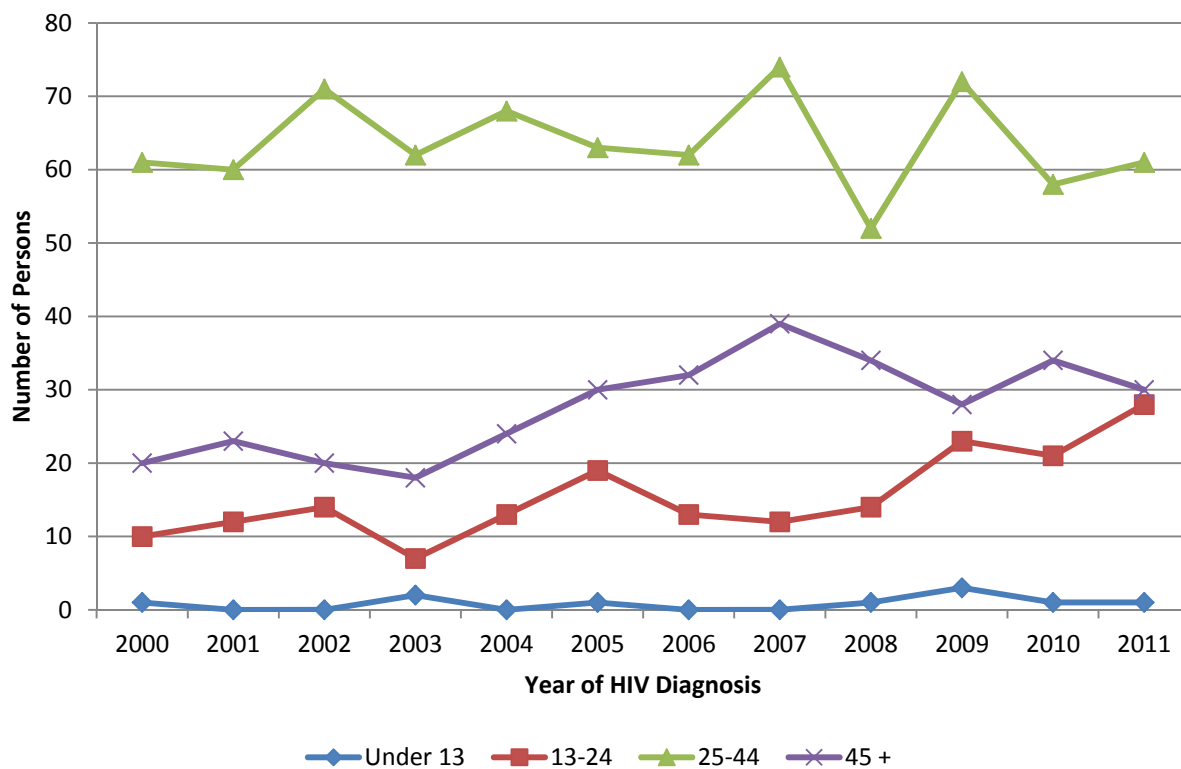


<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

The number of persons diagnosed with HIV infection by age groupings is shown in Figure 22. Persons 25 to 44 years of age have consistently accounted for the largest number of new diagnoses. Diagnoses among persons in this age group remained fairly steady with peaks seen in 2002, 2007 and 2009. From 2003 to 2007, the number of diagnoses in persons 45 years of age and above increased annually. Diagnoses among persons 13 to 24 years of age have trended mostly upward from 7 diagnoses in 2003 to 28 diagnoses in 2011, a fourfold increase in 9 years. The number of diagnoses among persons less than 13 years of age fluctuate between zero (in five of the years reported) and three in 2009. All diagnoses were infants born to HIV-infected mothers. One such perinatally-infected infant was born in 2011.

The number of persons diagnosed at age 45 years and above trended upward from 2003 through 2007, then decreased sharply from 2007 to 2009, and has remained fairly steady since (Figure 22). Diagnoses in older persons may be due in part to the “late testing” phenomenon. On the other hand, diagnoses at older ages may be related to successful antiretroviral therapies which have delayed the onset of age for persons diagnosed with HIV at a much younger age. Some have also linked diagnoses at older ages to an increase in sexual activity among divorced and widowed persons who may be naïve to the need to use condoms with new partners.

**Figure 22**  
**Age in Years at Time of HIV Diagnosis<sup>1</sup> for Iowa HIV Diagnoses**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

HIV diagnoses by age and gender are shown in Table 8 for persons diagnosed in 2011. Females diagnosed with HIV were considerably younger (median age = 30 years) than males (median age = 35 years), at time of diagnosis.

**Table 8**  
**Iowa HIV Diagnoses<sup>1</sup> by Gender and Age in Years at Diagnosis**  
**2011**

median age <sup>2</sup>	Males		Females		Total	
	m= 35 years		m= 30 years		m= 34 years	
Age at diagnosis	#	%	#	%	#	%
0-1	1	(1)	0	--	1	(1)
2-12	0	--	0	--	0	--
13-24	21	(21)	7	(35)	28	(23)
25-44	51	(51)	10	(50)	61	(51)
45-64	26	(26)	2	(10)	28	(23)
65 and over	1	(1)	1	(5)	2	(2)
<b>Total</b>	<b>100</b>		<b>20</b>		<b>120</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> m= median age of cases for that time period.

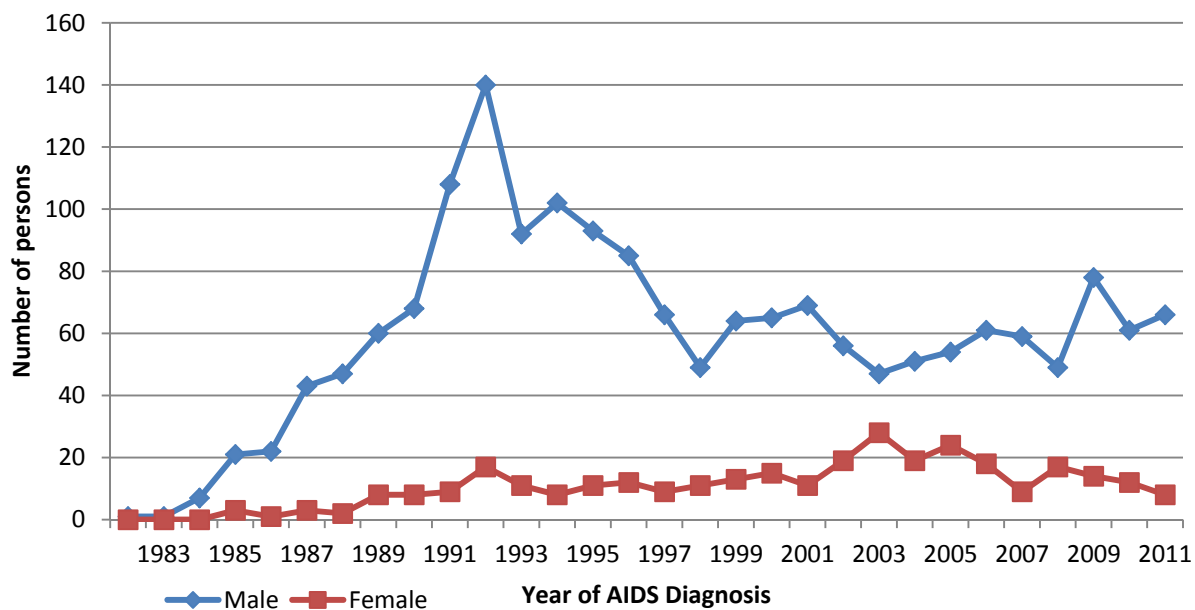
Percentage totals may not equal 100 due to rounding of numbers.

## Gender – AIDS diagnoses

Historically, females have accounted for only a small proportion of Iowa's AIDS diagnoses (Figure 23). From 1982 to 2011, there were 320 AIDS diagnoses among females, approximately 15% of all cases. Diagnoses among females have been increasing very slowly, with the increase most pronounced between 2001 and 2007. AIDS diagnoses among females have exceeded 20 only twice, once in 2003, and again in 2005.

Diagnoses of AIDS among males peaked in 1992 at 140 and, due to the effectiveness of antiretroviral therapies, have decreased substantially since then. However, after reaching a low of 47 diagnoses in 2003, the number of diagnoses among males has begun another upward creep. The increase suggests the possibility that antiretroviral therapies were less effective for some persons, perhaps those with significant immune system damage before therapies were begun (e.g., late testers). Some of the increase in diagnoses from 1998 to 2003 may also be explained by an increase in diagnoses among foreign-born persons.

**Figure 23**  
**Iowa Diagnoses of AIDS<sup>1</sup> by Gender**  
**1982 through 2011**

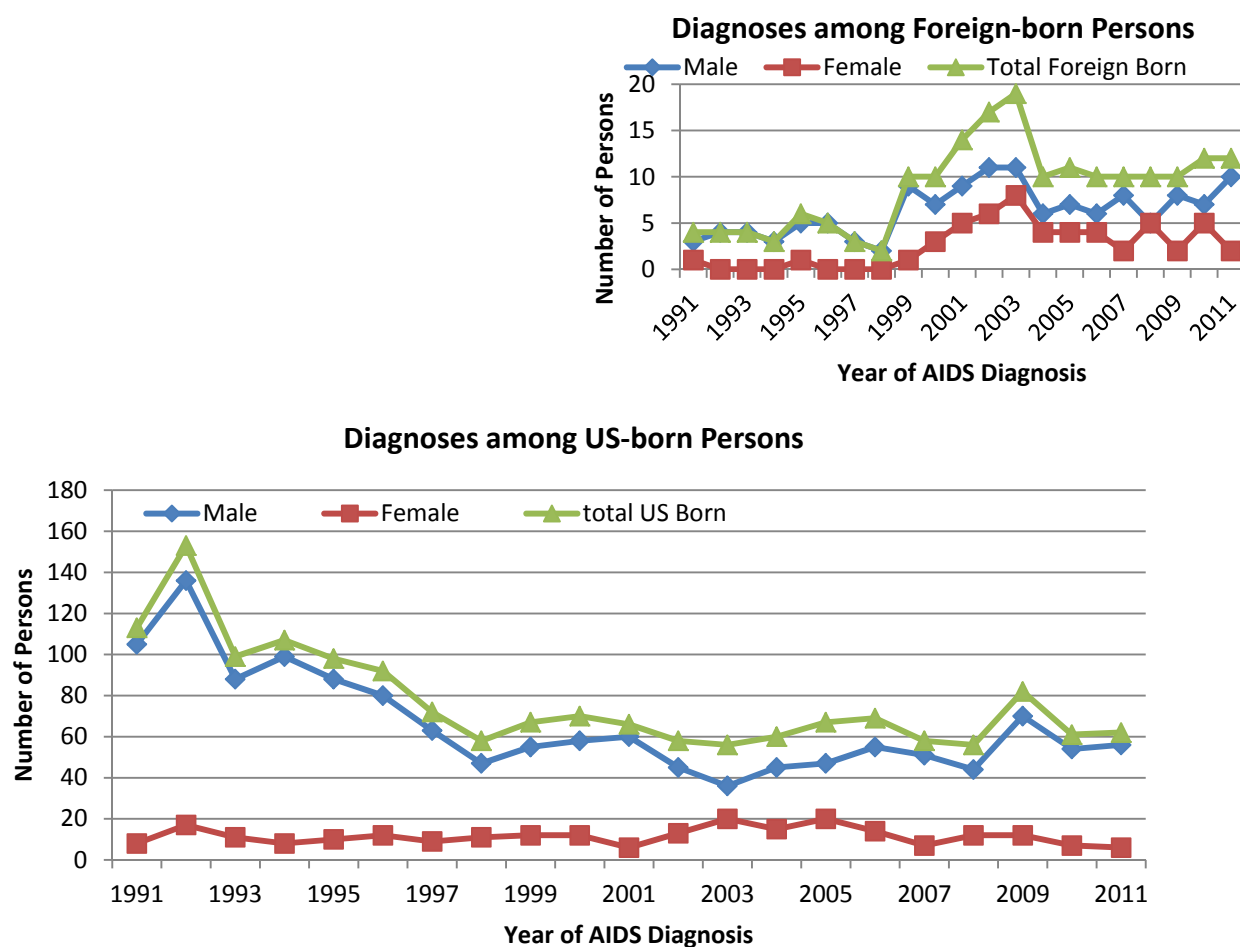


<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

AIDS diagnoses by gender and country of origin are shown in Figure 24. The insert shows that diagnoses of AIDS among foreign-born persons increased substantially from 1998 to 2003 for both males and females. However, after a drop for many years, AIDS diagnoses among foreign-born males have been increasing since 2007. AIDS diagnoses among both male and female U.S.-born persons have remained fairly steady since 1998.

The annual number of AIDS diagnoses among U.S.-born males has gone from a peak of 153 diagnoses in 1992 to 56 diagnoses in 2011, a 63% decrease. There was a spike in diagnoses in 2009, however. While AIDS diagnoses among U.S.-born females have been fairly consistent during this period, diagnoses increased slightly from 2002 to 2005. Though relatively few AIDS cases have been diagnosed in foreign-born males and females, these diagnoses explain much of the increases seen among all males and females from 1998 to 2003.

**Figure 24**  
**Diagnoses of AIDS by Gender and Country of Origin**  
**1991 through 2011**

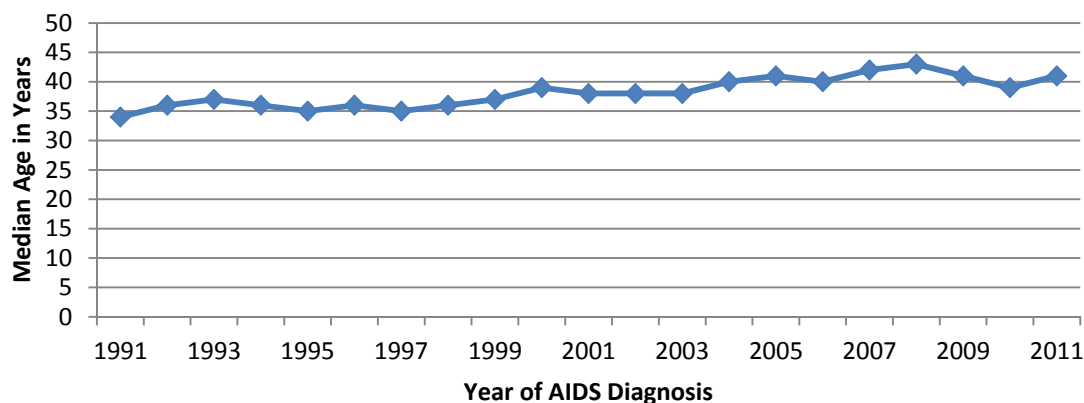


<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

## Age – AIDS Diagnoses

Figure 25 shows the median age at diagnosis of AIDS for residents of Iowa. The median age increased from 34 years in 1991 to 41 in 2011, probably reflecting both the increased time from HIV diagnosis to AIDS because of better treatments and the increase in HIV diagnoses among those 45 years of age and older (Figure 22, above).

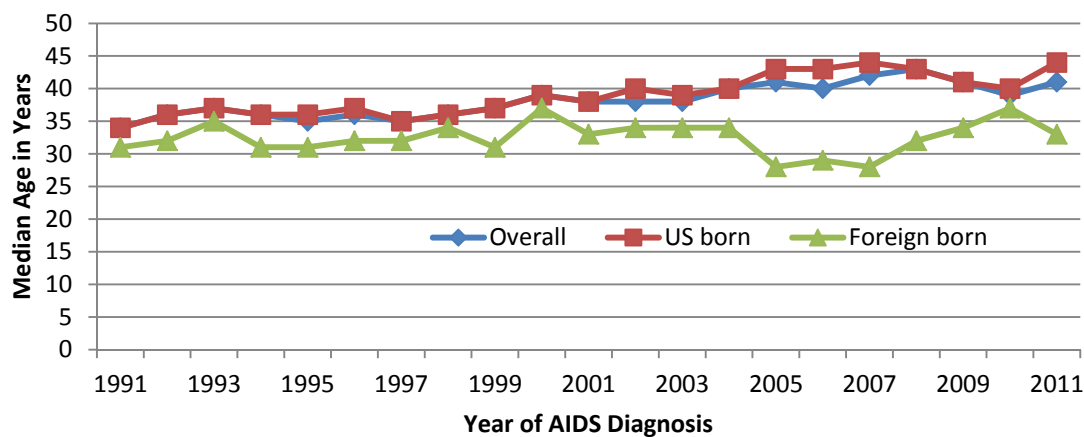
**Figure 25**  
**Median Age in Years at Time of AIDS Diagnosis<sup>1</sup>**  
**1991 through 2011**



<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

Figure 26 shows the median age at diagnosis of AIDS for both foreign-born and US-born persons who were residents of Iowa at the time of their diagnosis. Foreign-born individuals are mostly younger at AIDS diagnosis and an increase in the overall median age at time of AIDS diagnosis in 2011 was due to a decrease in AIDS diagnoses among foreign-born persons.

**Figure 26**  
**Median Age in Years at Time of AIDS Diagnosis<sup>1</sup> by Country of Origin**  
**1991 through 2011**



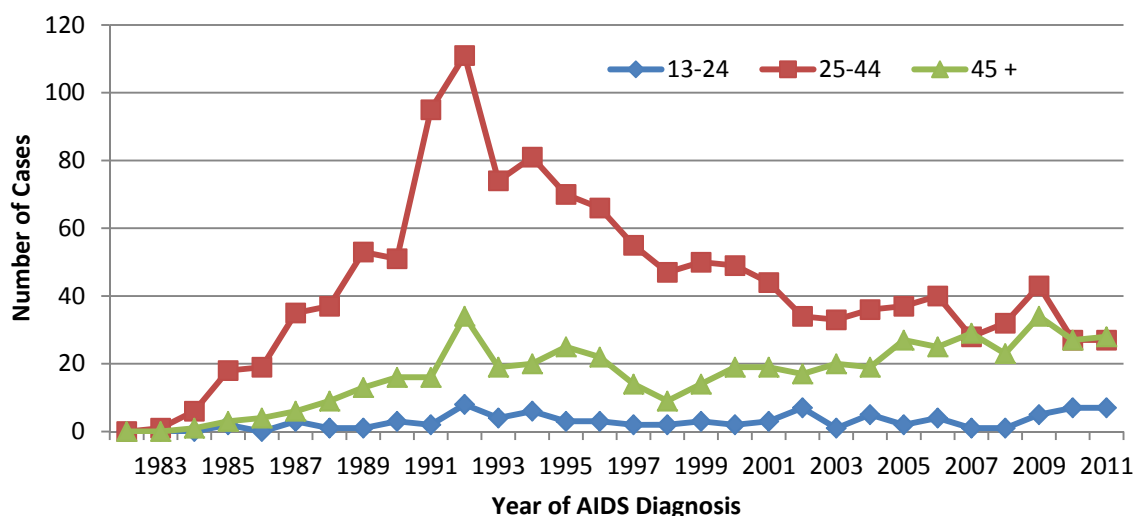
<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

Diagnoses of AIDS for each of three age groups are shown in Figure 27. Historically, most persons diagnosed with AIDS have been 25 to 44 years of age. Nonetheless, this age group has also seen the largest decreases in diagnoses since 1992. Their numbers in 2010 and 2011 are equal to those in the 45 years of age and over group.



A spike in diagnoses in all age groups in 1992 was followed by substantial decreases. However, two age groups have seen more recent increases in AIDS diagnoses. Diagnoses have been increasing after 1998 among persons 45 years of age and older. Because successful antiretroviral therapy should delay the progression to AIDS and the age at diagnosis of AIDS, increased diagnoses among this group are to be expected. Diagnoses among persons 13 to 24 years of age have remained relatively steady despite peaks in 1992 and 2002. However, diagnoses in this age group have shown a slow uptrend since 2008.

**Figure 27**  
**Age<sup>1</sup> in Years at Time of AIDS Diagnosis<sup>2</sup>**  
**1982 through 2011**



<sup>1</sup> There were too few cases among age group "0-12" to plot.

<sup>2</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

Iowa AIDS cases by age and gender are shown in Table 9 for cases diagnosed in 2011 and cumulatively from 1982 through 2011. Males and females do not differ in median age at time of AIDS diagnosis overall, but males diagnosed in 2011 were considerably older than females with respective median ages of 42 and 37 at time of AIDS diagnosis. Males also had a larger range of ages in 2011. Cumulatively, 69% of all persons diagnosed with AIDS were between the ages of 25 and 44. In 2011, the percentage of diagnoses between the ages of 25 and 44 had dropped below 50% as increasing numbers of people ages 45 and older were being diagnosed with AIDS.

Median ages at time of HIV diagnosis (Table 8, above) and AIDS diagnosis (Table 9) cannot be directly compared because these are not mutually exclusive categories. Persons diagnosed with HIV and AIDS within the same year would be counted in each category, and would bring the two medians closer together.

Although median age at time of diagnosis of AIDS has increased over time, few diagnoses of HIV infection or AIDS have been among senior citizens in Iowa. Only 2% of cumulative AIDS diagnoses were among those 65 years of age or older at time of diagnosis. There was only one AIDS diagnosis among persons 65 years of age and older in 2011.

**Table 9**  
**Iowa AIDS Diagnoses<sup>1</sup> by Gender and Age at Diagnosis in Years**  
**2011 Diagnoses and Cumulative Diagnoses from 1982 through 2011**

median age <sup>1</sup>	2011						Cumulative					
	Males		Females		Total		Males		Females		Total	
	m=42		m=37		m=41		m=37		m=37		m=37	
Age at diagnosis	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
0-1	0	--	0	--	0	--	6	--	2	--	8	--
2-12	0	--	0	--	0	--	4	--	1	--	5	--
13-24	8	(12)	0	--	8	(11)	89	(5)	20	(6)	109	(5)
25-44	31	(47)	5	(63)	36	(49)	1,229	(69)	218	(68)	1,447	(69)
45-64	26	(39)	3	(37)	29	(39)	430	(24)	70	(22)	500	(24)
65 and over	1	--	0	--	1	--	27	(2)	9	(3)	36	(2)
<b>Total</b>	<b>66</b>		<b>8</b>		<b>74</b>		<b>1,785</b>		<b>320</b>		<b>2,105</b>	

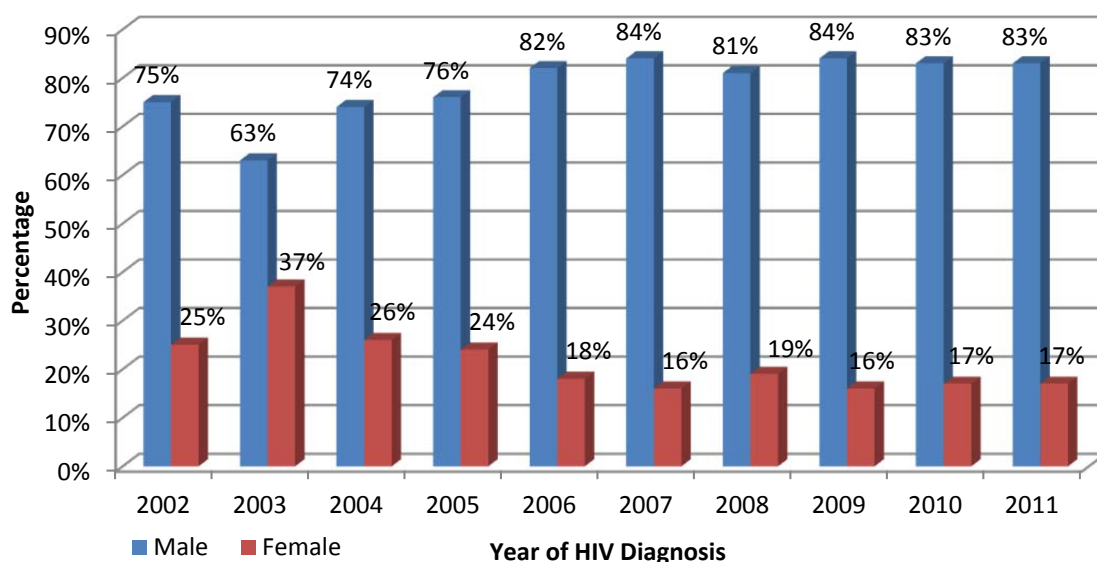
<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

<sup>2</sup> m= median age in years at diagnosis of AIDS for the specified time period.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

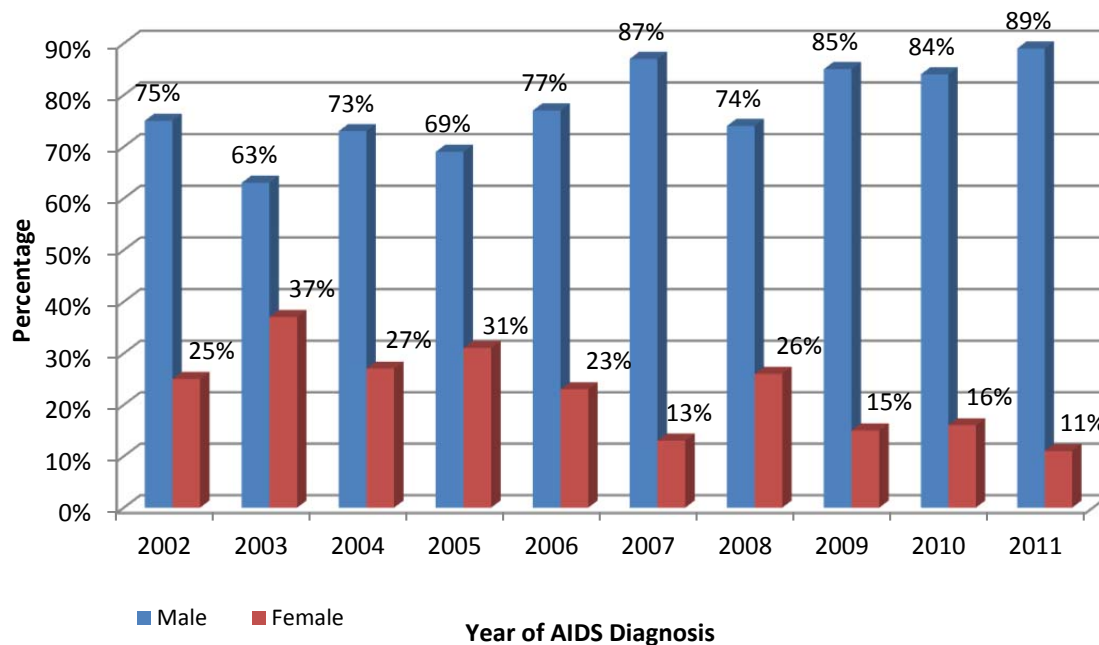
Figures 28 and 29 display HIV and AIDS diagnoses, respectively, by gender. Figure 28 indicates that the proportion of HIV diagnoses among males has been above 80% since 2006. Figure 29 shows that the proportion of AIDS diagnoses among males declined to 63% in 2003 but has been near or above 80% since 2006.

**Figure 28**  
**Iowa HIV Diagnoses<sup>1</sup> by Gender**  
**2002 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

**Figure 29**  
**Iowa AIDS Diagnoses<sup>1</sup> by Gender**  
**2002 through 2011**



<sup>1</sup> AIDS diagnoses reflect all persons who were residents of Iowa when first diagnosed with AIDS.

#### Summary of Age and Gender Data

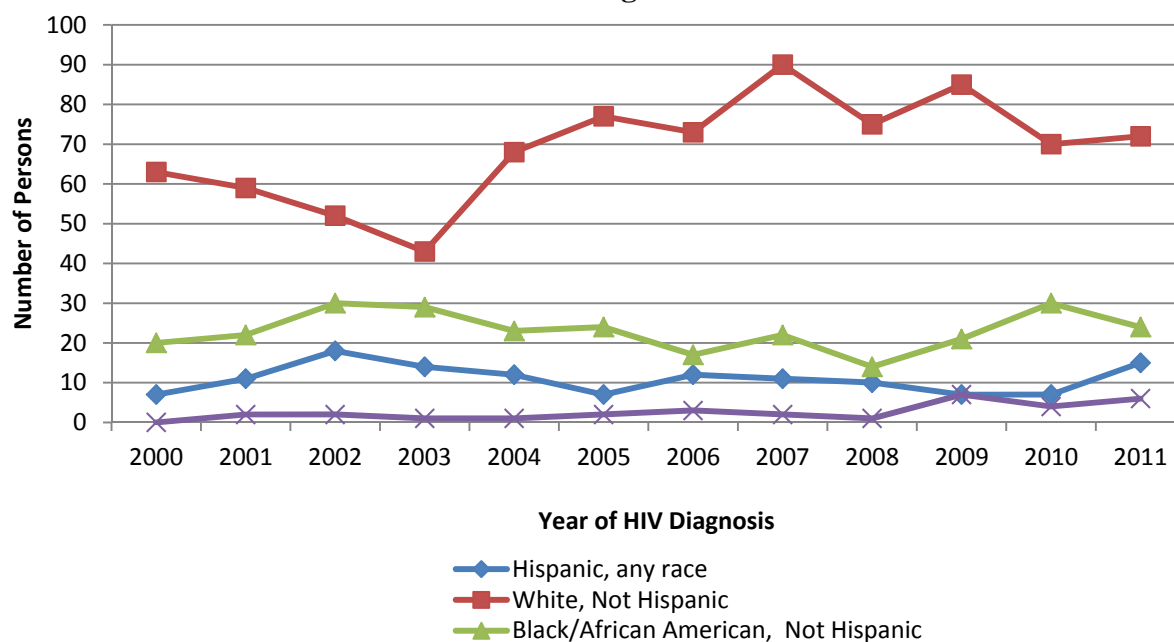
- Diagnoses of HIV among U.S.-born males have increased substantially in the past five years. No other group has seen similar increases.
- Diagnoses of HIV and AIDS overwhelmingly occur among men and among persons 25 to 44 years of age. However, it is notable that since 2003 HIV diagnoses have increased among persons age 45 years and older and persons 13 to 24 years of age.
- Median age at diagnosis of AIDS increased from 34 years in 1991 to 41 years in 2011. Significant differences were seen in median age at diagnosis among males and females. In 2011, median age at AIDS diagnosis was 37 years for females and 42 years for males. Median age at diagnosis of HIV has changed very little in the last 10 years, hovering in the mid-thirties.
- The number of women diagnosed with HIV and AIDS has increased considerably throughout the epidemic. The increase in diagnoses seen after 1998 can be explained in part by an increase in diagnoses among foreign-born women.

## RACE AND ETHNICITY

### Race and Ethnicity – HIV Diagnoses

Figure 30 displays diagnoses among the major racial and ethnic groups in Iowa. White, non-Hispanic persons accounted for 72 (60%) of the new HIV diagnoses among residents of Iowa in 2011. HIV diagnoses among white, non-Hispanic persons declined steadily from 63 in 2000 to a low of 43 in 2003. In 2004 they began a steady climb peaking at 90 in 2007 and 85 in 2009. Unlike the changes seen among white, non-Hispanic persons, diagnoses among black, non-Hispanic persons and among Hispanic persons increased from 1999 to 2002, but decreased slightly after 2002. In 2008, diagnoses among black, non-Hispanic persons began to trend upward again and in 2010 numbered the same as in 2002 and 2003. Diagnoses among Hispanic persons have yet to reach the number reported in 2002.

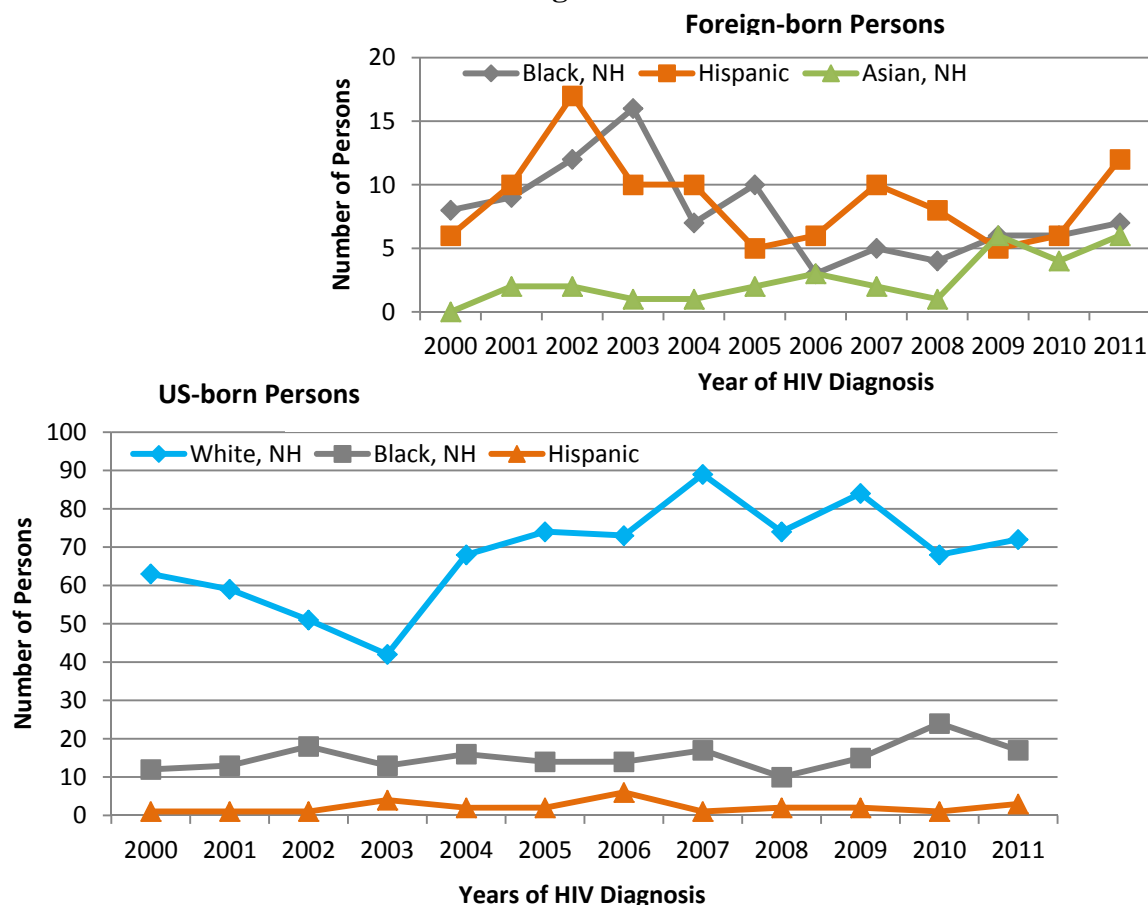
**Figure 30**  
**Iowa HIV Diagnoses<sup>1</sup> by Race and Ethnicity**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

As Figure 31 shows, increases in diagnoses among minorities between 1999 and 2002 can mainly be attributed to increases in diagnoses among foreign-born persons (see inset). Similarly, the slight decreases in diagnoses among minorities between 2002 and 2006 are due to decreased diagnoses among foreign-born individuals. Diagnoses among U.S.-born black, non-Hispanic persons and U.S.-born Hispanic persons have been fairly stable since 2000. That said, it is important to note that while diagnoses among U.S.-born black persons reached a low of 10 in 2008, they are on an upswing, peaking at 24 in 2010, then dropping to 17 in 2011. Virtually all the diagnoses among Hispanic persons have occurred among those who were foreign-born, while nearly all of the white, non-Hispanic diagnoses have been among U.S.-born persons.

**Figure 31**  
**Iowa HIV Diagnoses<sup>1</sup> by Race, Ethnicity, and Country of Origin**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

Table 10 shows the number of persons diagnosed with HIV in 2011 by race, ethnicity, and country of origin. Rates per 100,000 population are given as well as absolute numbers and percentages. Race-specific rates are the most appropriate way to compare the burden of disease between affected racial and ethnic groups. The rates adjust for the size of the specific racial or ethnic group within the state and allow direct comparison across groups.

In 2011, 60% of the persons diagnosed with HIV were white, non-Hispanic, 20% were black, non-Hispanic, and 13% were Hispanic. Twelve of the 15 diagnoses among Hispanics were in foreign-born persons compared to no foreign-born diagnoses in the white, non-Hispanic population.

In 2011, HIV diagnoses among black, non-Hispanic persons numbered 26.5 per 100,000 population compared to 2.7 diagnoses per 100,000 among white, non-Hispanic persons. Thus, black, non-Hispanic persons were approximately 10 times more likely to be diagnosed with HIV infection than were white, non-Hispanic persons. This clearly demonstrates the disproportionate

representation of black, non-Hispanic persons among HIV-infected Iowans. Hispanic persons were also disproportionately diagnosed with HIV. At 9.5 diagnoses per 100,000 persons, they were 3.5 times more likely to be diagnosed than white, non-Hispanic persons.

**Table 10**  
**Iowa HIV Diagnoses<sup>1</sup> by Race, Ethnicity, and Country of Origin**  
**2011**

<b>Race and Ethnicity</b>	<b>All Persons</b>			<b>U.S.-Born Persons</b>		<b>Foreign-Born Persons</b>	
	<b>#</b>	<b>(%)</b>	<b>(#/100,000)<sup>2</sup></b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
White, non-Hispanic	72	(60)	2.7	72	(77)	0	(0)
Black, non-Hispanic	24	(20)	26.7	17	(18)	7	(26)
Hispanic, all races	15	(13)	9.5	3	(3)	12	(44)
Asian	6	(5)	10.8	0	--	6	(22)
Multiple races	3	(3)	7.1	1	(1)	2	(7)
<b>Total</b>	<b>120</b>		<b>3.9</b>	<b>93</b>		<b>27</b>	

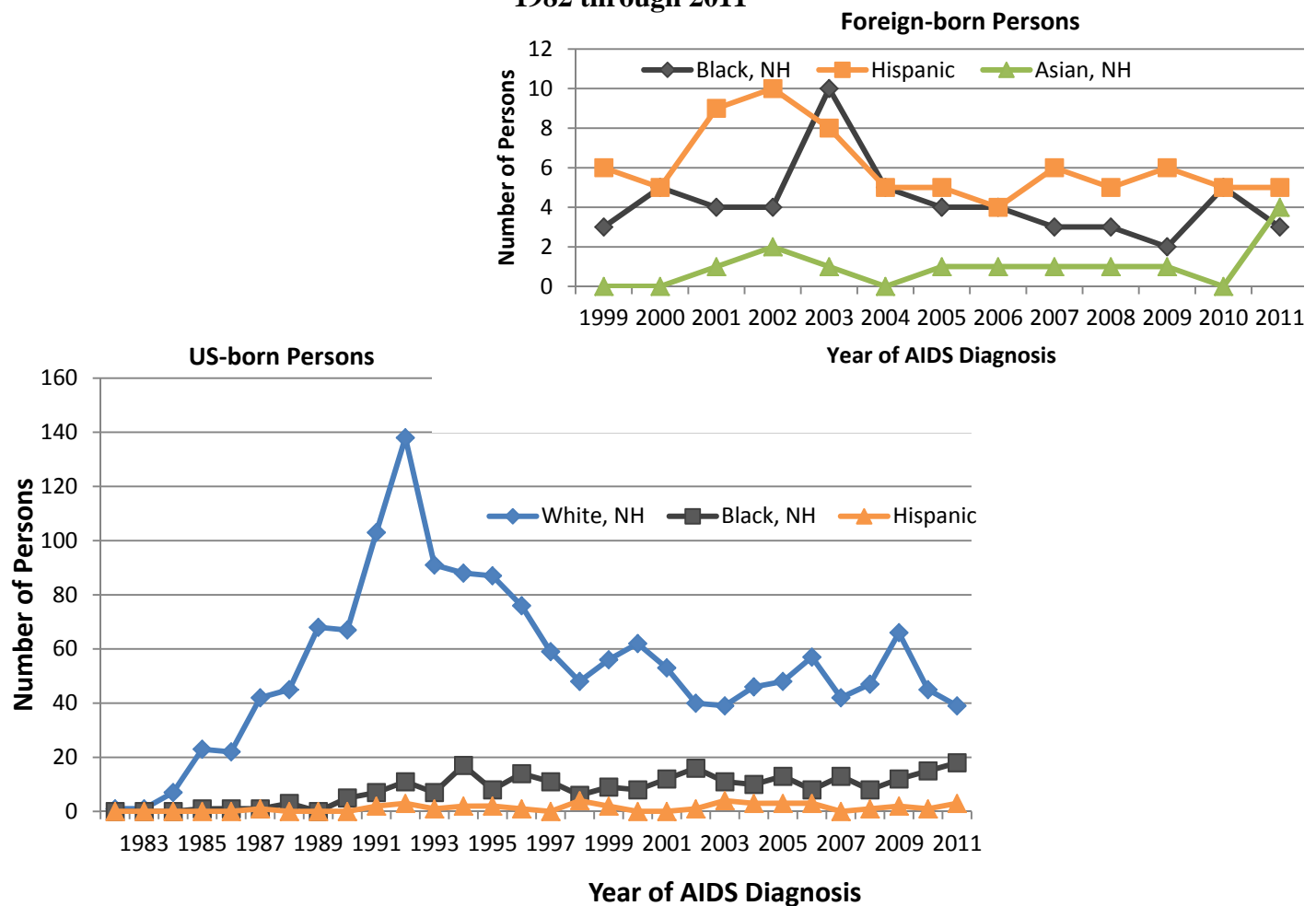
<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> Based on 2011 population estimate data from the U.S. Census Bureau, prevalence per 100,000 population. Percentage totals may not equal 100 due to rounding of numbers.

### **Race and Ethnicity – AIDS Diagnoses**

Figure 32 shows the number of AIDS diagnoses by race, ethnicity and country of origin. The benefits of antiretroviral therapies that became available after 1995 are most evident among U.S.-born white, non-Hispanic persons. While they have shown some fluctuation across time, diagnoses of AIDS among this group have decreased steadily after peaking in 1992. Diagnoses of AIDS among U.S.-born minority populations have remained fairly level since 1995, although there has been a small uptick among non-Hispanic Black persons since 2008. Nearly all AIDS diagnoses among Hispanics are among foreign-born persons. Diagnoses among foreign-born Hispanics peaked in 2002 and have decreased or remained level since that time. Diagnoses of AIDS among foreign-born black, non-Hispanic persons peaked in 2003 and have declined since.

**Figure 32**  
**Iowa AIDS Diagnoses<sup>1</sup> by Race/Ethnicity and Country of Origin**  
**1982 through 2011**



<sup>1</sup> AIDS diagnoses reflect all persons diagnosed with AIDS for the first time who were residents of Iowa at time of diagnosis.

Of the 2,105 cumulative AIDS diagnoses through December 31, 2011, (Table 11), 78% are among white, non- Hispanic persons, 14% are among black, non-Hispanic persons, 7% are among Hispanic persons, and less than 2% are among other groups. In comparing diagnoses in 2011 to cumulative AIDS diagnoses, a higher proportion of 2011 diagnoses are among minorities (29% versus 20% respectively). It is clear from Figure 32 that the increase in the proportion of AIDS diagnoses among minorities since 1992 is mostly due to the substantial decrease in the number of diagnoses among white, non-Hispanic persons rather than to an increase in diagnoses among minorities. However, the increase in diagnoses of HIV and AIDS among foreign-born persons of African and Hispanic decent that occurred between 1999 and 2003 may also have played a part.

**Table 11**  
**Iowa AIDS Diagnoses<sup>1</sup> by Race and Ethnicity**  
**2011 Diagnoses and Cumulative Diagnoses 1982 through 2011**

Race	2011			Cumulative	
	#	(%)	(#/100,000)	#	(%)
White, non- Hispanic	39	(53)	1.4	1,616	(77)
Black, non-Hispanic	21	(28)	24.0	303	(14)
Hispanic	8	(11)	5.3	145	(7)
Asian	4	(5)	8.0	16	(1)
Native Hawaiian/ Pacific Islander	--	--	--	1	--
Am. Indian/ Alaska Native	--	--	--	4	--
Multiple Races	2	(3)	--	20	(1)
<b>Total</b>	<b>74</b>		<b>2.4</b>	<b>2,105</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa. Cumulative data include persons diagnosed from 1982 through 2011.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

AIDS diagnosis rates in 2011 demonstrate the over-representation of minorities among AIDS diagnoses. Black, non-Hispanic persons had an AIDS diagnosis rate of 24 per 100,000 population, 17 times higher than the rate of 1.4 per 100,000 among white, non-Hispanic persons. This may reflect poorer access to HIV primary medical care, later testing, or poorer responses to antiretroviral therapies among black, non-Hispanic persons.

The AIDS diagnosis rate for Hispanic persons was almost four times the rate among white non-Hispanic persons, indicating that the Hispanic population may also be less likely to access HIV care and testing services.



## Race and Ethnicity – Persons Living with HIV or AIDS

Table 12 shows the prevalence, i.e., the number of persons living with HIV or AIDS (PLWHA) whose first diagnosis was as a resident of Iowa, as of December 31, 2011, by race and ethnicity. Races and ethnicities with the largest prevalence rates (PLWHA per 100,000 population) are most impacted by the disease. Changes in prevalence since 2008 demonstrate which populations have seen the most dramatic increases in prevalence over the past three years.

**Table 12**  
**Persons Living with HIV or AIDS<sup>1</sup> (PLWHA) as of December 31, 2011**  
**by Race and Ethnicity**

<b>Race and Ethnicity</b>	<b>#</b>	<b>(%)</b>	<b>(#/100,000)<sup>2</sup></b>	<b>Change<sup>3</sup></b>
White, non-Hispanic	1,303	(67)	48.2	+7.3
Black, non-Hispanic	394	(20)	442.0	+31.8
Hispanic	169	(9)	111.5	+3.2
Asian	37	(2)	69.7	+26.9
Native Hawaiian/ Pacific Islander	1	--	--	--
American Indian/Alaska Native	3	--	--	--
Multiple Races	32	(2)	--	--
<b>Total</b>	<b>1,939</b>		<b>63.6</b>	<b>+10.3</b>

<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2011. Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Based on 2010 state population census from the U.S. Census Bureau.

<sup>3</sup> Change from 2008 number of PLWHA per 100,000 population.

Overall, the state saw an increase of over 10 PLWHA per 100,000 population from 2008 to 2011, indicating that more persons were newly diagnosed with HIV or AIDS than died during that time.

On December 31, 2011, the prevalence of HIV and AIDS for white, non-Hispanic persons was 48.2 PLWHA per 100,000 population compared to 442.0 per 100,000 for black non-Hispanic persons and 111.5 for Hispanic persons. Black, non-Hispanic persons had over 9 times higher prevalence per 100,000 than white, non-Hispanic persons. Hispanic persons had over twice the prevalence of white, non-Hispanic persons.

Black, non-Hispanics, whose prevalence grew by 31.8 PWLHA per 100,000 population from 2008 through 2011, experienced the greatest increase. This is over four times the increase in the white, non-Hispanic population, indicating that the disparity between the groups is increasing. The prevalence among the Hispanic and Asian populations also increased during this time period.

Although the absolute numbers of minority diagnoses are comparatively small, prevalence data show that HIV and AIDS disproportionately affect minority groups. Figure 33 further illustrates this. Comparing the percentage of diagnoses in a racial or ethnic group to the proportion of the total population that belongs to that group will demonstrate disparities. Black, non-Hispanic persons account for 2.8% of Iowa's population, and Hispanics account for 4.5%. These two

populations each account for more than those percentages of HIV and AIDS diagnoses and PLWHA.

**Figure 33**  
**Race and Ethnicity as Proportions of HIV and AIDS Diagnoses, HIV/AIDS Prevalence,**  
**and the General Population of Iowa**

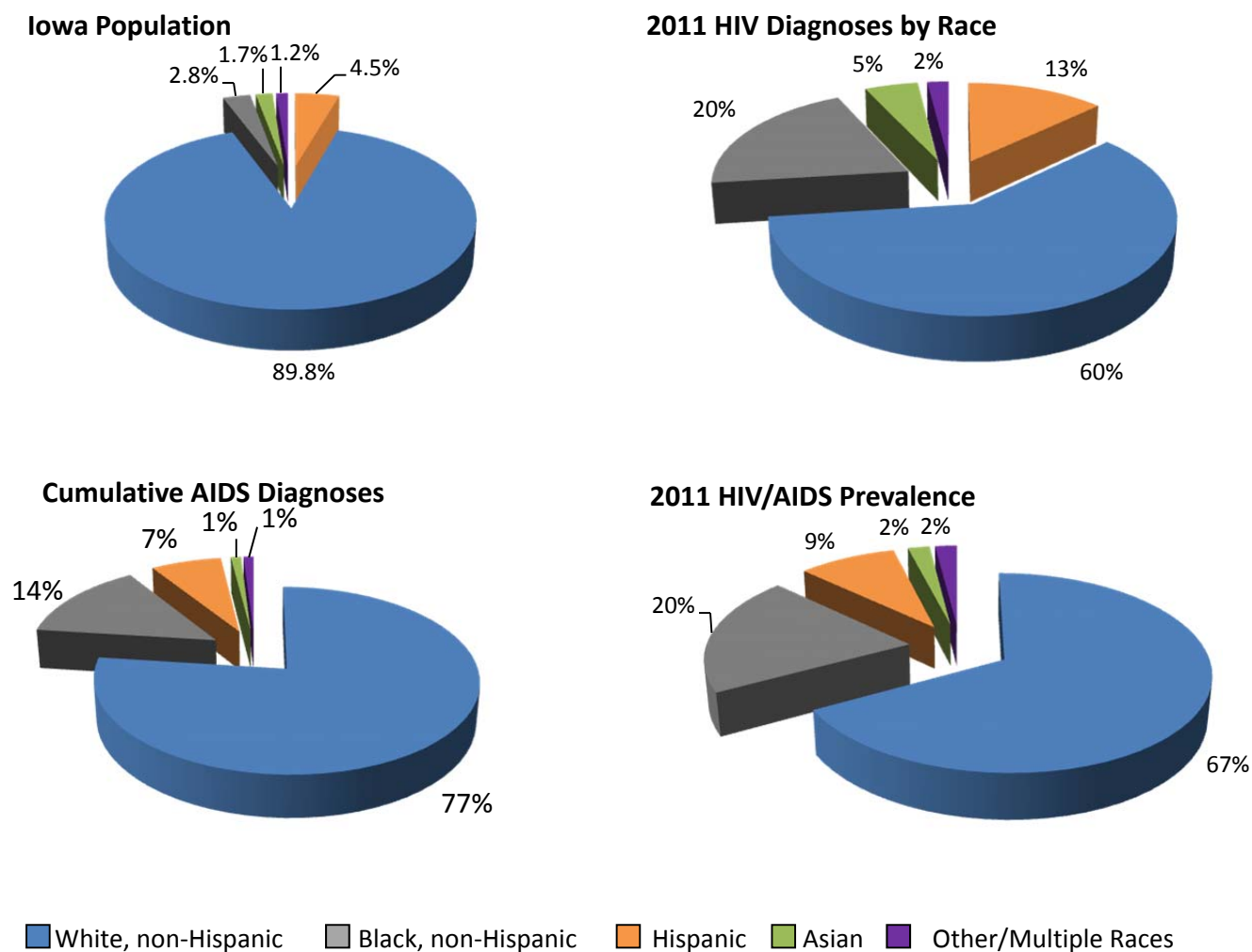


Figure 33 shows that the over-representation of minority populations is most evident among 2011 HIV diagnoses and among persons living with HIV or AIDS (prevalence). Black, non-Hispanic persons accounted for 20% of HIV diagnosis in 2011, more than six times what would be expected from the size of the black, non-Hispanic population in Iowa. Hispanics accounted for 13% of HIV diagnoses in 2011 and 9% of persons living with HIV/AIDS, yet make up less than 5% of Iowa's population.

The fact that the over-representation is most pronounced among the most recent diagnoses of HIV and least pronounced among cumulative AIDS diagnoses indicates that disparities in diagnoses among black, non-Hispanic and among Hispanic groups have increased with time.

### Race, Ethnicity, and Gender – HIV Diagnoses

The breakdown of HIV diagnoses in 2011 by race, ethnicity, and gender shows that the overrepresentation of minorities mainly extends to five specific groups: black, non-Hispanic males; black, non-Hispanic females; Hispanic males; Asian males and multiple-race males. All five groups have HIV diagnosis rates significantly higher than the general population. These data are displayed in Table 13.

**Table 13**  
**Iowa HIV Diagnoses<sup>1</sup> in 2011**  
**by Race, Ethnicity, Gender and Country of Origin**

	All 2011 Diagnoses			U.S.-born Only	
<b>Males</b>	<b>#</b>	<b>(%)</b>	<b>(#/100,000)<sup>2</sup></b>	<b>#</b>	<b>(%)</b>
White, non-Hispanic	61	(61)	4.6	59	(81)
Black, non-Hispanic	18	(18)	37.8	12	(16)
Hispanic	12	(12)	14.4	1	(1)
Asian	6	(6)	21.7	--	--
Multiple Races	3	(3)	14.2	1	--
<b>Total Males</b>	<b>100</b>		<b>6.6</b>	<b>73</b>	

	All 2011 Diagnoses			U.S.-born Only	
<b>Females</b>	<b>#</b>	<b>(%)</b>	<b>(#/100,000)<sup>2</sup></b>	<b>#</b>	<b>(%)</b>
White, non-Hispanic	11	(55)	0.8	11	(85)
Black, non-Hispanic	6	(30)	14.2	1	(8)
Hispanic	3	(15)	4.0	1	(8)
Asian	--	--	--	--	--
Multiple Races	--	--	--	--	--
<b>Total Females</b>	<b>20</b>		<b>1.3</b>	<b>13</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV infection for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis.

<sup>2</sup> Based on 2011 population estimates from the U.S. Census Bureau

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Black, non-Hispanic males had the highest HIV diagnosis rate at 37.8 diagnoses per 100,000 population, over eight times higher than the rate of 4.6 per 100,000 for white, non-Hispanic males in 2011. Black, non-Hispanic females had a diagnosis rate of 14.2 per 100,000 population, almost 18 times the rate for white, non-Hispanic females. The rate is also disproportionately higher among Hispanic persons than white, non-Hispanic persons – over three times higher for males and five times higher for females.

Despite the great disparity in diagnosis rates, white, non-Hispanic males still account for the largest group of persons being diagnosed with HIV in Iowa. In 2011, they accounted for 51% of all persons newly diagnosed with HIV disease.

### Race, Ethnicity, and Gender – AIDS Diagnoses

Table 14 shows AIDS diagnoses in 2011 and cumulatively through 2011. Although cumulative AIDS diagnoses are overwhelmingly among white, non-Hispanic persons, AIDS diagnosis rates show that some minority populations are more severely impacted than the white, non-Hispanic population.

In 2011, black, non-Hispanic men had an AIDS diagnosis rate of 37.8 diagnoses per 100,000 population, 15 times that of white, non-Hispanic men at 2.6 per 100,000. Black, non-Hispanic women at 7.1 diagnoses per 100,000 population had a rate nearly 24 times that of white, non-Hispanic women at 0.3 persons per 100,000. Hispanic males, at 8.4 diagnoses per 100,000 population had a rate over three times that of white, non-Hispanic males.

**Table 14**  
**Iowa AIDS Diagnoses in 2011 and Cumulatively from 1982 through 2011**  
**by Race, Ethnicity and Gender**

	2011 Diagnoses			Cumulative	
	#	(%)	(#/100,000)	#	(%)
<b>Males</b>					
White, non-Hispanic	35	(53)	2.6	1,421	(80)
Black, non-Hispanic	18	(27)	37.8	208	(12)
Hispanic	7	(11)	8.4	121	(7)
Asian	4	(6)	14.5	14	(1)
Native Hawaiian/ Pacific Islander	--	--	--	1	--
Am. Indian/ Alaska Native	--	--	--	3	--
Multiple Races	2	(3)	9.5	17	(1)
<b>Total Males</b>	<b>66</b>		<b>4.3</b>	<b>1,785</b>	
<b>Females</b>					
White, non-Hispanic	4	(50)	0.3	195	(61)
Black, non-Hispanic	3	(38)	7.1	95	(30)
Hispanic	1	(13)	1.3	24	(8)
Asian	--	--	--	2	--
Native Hawaiian/ Pacific Islander	--	--	--	--	--
Am. Indian/ Alaska Native	--	--	--	1	--
Multiple Races	--	--	--	3	(1)
<b>Total Females</b>	<b>8</b>		<b>0.5</b>	<b>320</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa. Cumulative data include persons diagnosed from 1982 through 2011.

<sup>2</sup> Based on 2011 state population projections from the U.S. Census Bureau.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

## Race, Ethnicity, and Gender – Persons Living with HIV and AIDS

The higher rates of diagnosis of HIV and AIDS among minority groups correspond to higher prevalences of persons living with HIV and AIDS per 100,000 population. Although the largest *numbers* of persons living with HIV and AIDS are white, non-Hispanic persons, black, non-Hispanic males have the highest *prevalence* rate of persons living with HIV or AIDS per 100,000 population of any ethnic or racial group (Table 15 and Figure 34). There were nearly 519 infected persons for every 100,000 black, non-Hispanic males as December 31, 2011. If all populations experienced this prevalence, there would be more than 15,893 persons living with HIV or AIDS in Iowa.

With a prevalence of 348 persons per 100,000 population, black, non-Hispanic females have the second highest prevalence of persons living with HIV or AIDS per 100,000 population, more than 23 times that of white, non-Hispanic females. Prevalence in black, non-Hispanic females continues to increase rapidly. Prevalence among Hispanic men and Asian men and women has also increased in the past three years. Surprisingly, prevalence rates in Hispanic males decreased from 2008 to 2011.

**Table 15**  
**Persons Living with HIV or AIDS (PLWHA) as of December 31, 2011<sup>1</sup>**  
**by Race, Ethnicity and Gender**

<b>Males</b>	<b>#</b>	<b>%</b>	<b>(#/100,000)<sup>2</sup></b>	<b>Change<sup>3</sup></b>
White, non-Hispanic	1,100	(72)	82.6	+13.3
Black, non-Hispanic	247	(16)	518.8	+34.4
Hispanic	144	(9)	172.9	-0.6
Asian	29	(2)	104.8	+35.9
Native Hawaiian/ Pacific Islander	1	--	--	--
Am. Indian/ Alaska Native	2	--	--	--
Multiple Races	25	(2)	71.5	+47.6
<b>Total Males</b>	<b>1,548</b>		<b>102.0</b>	<b>+17.0</b>

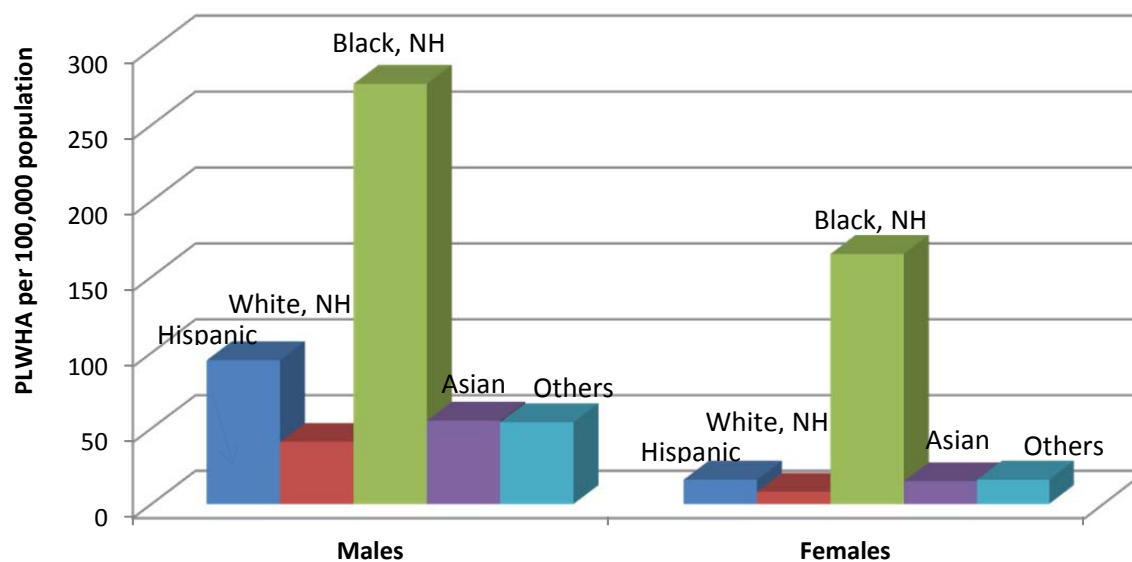
<b>Females</b>	<b>#</b>	<b>%</b>	<b>(#/100,000)</b>	<b>Change</b>
White, non-Hispanic	203	(52)	14.8	+1.2
Black, non-Hispanic	147	(38)	348.1	+17.5
Hispanic	25	(6)	33.5	+1.0
Asian	8	(2)	28.5	+11.5
Native Hawaiian/ Pacific Islander	0	--	--	--
Am. Indian/ Alaska Native	1	--	--	--
Multiple Races	7	(2)	33.3	+0.6
<b>Total Females</b>	<b>391</b>		<b>25.3</b>	<b>+3.1</b>

<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2011. Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Based on 2011 state population estimates from the U.S. Census Bureau.

<sup>3</sup> Change from 2008 number of PLWHA per 100,000 population.

**Figure 34**  
**Persons Living with HIV or AIDS (PLWHA)<sup>1</sup> per 100,000 Population<sup>2</sup>**  
**as of December 31, 2011, by Race, Ethnicity and Gender**

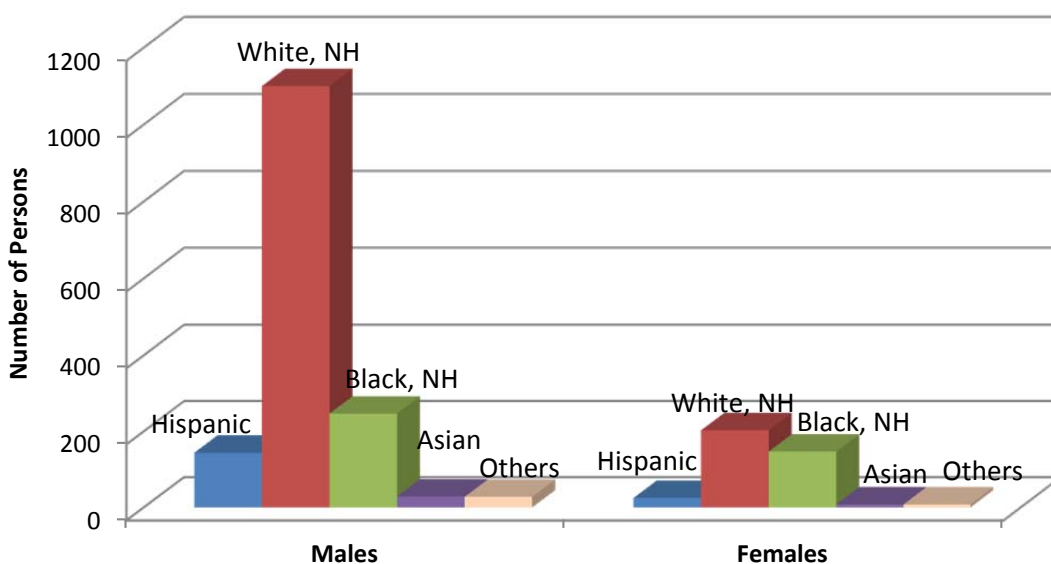


<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2011. Persons are counted only once. All deaths may not have been reported

<sup>2</sup> Based on 2011 state population estimates from the U.S. Census Bureau.

Despite the disproportionate numbers of persons living with HIV or AIDS per 100,000 population among black, non-Hispanic persons and among Hispanics, white, non-Hispanic males still account for the largest *numbers* of persons living with HIV/AIDS in the state (Figure 35).

**Figure 35**  
**Number of Persons Living with HIV or AIDS on December 31, 2011<sup>1</sup>**  
**by Race, Ethnicity and Gender**



<sup>1</sup> Persons whose first diagnosis of HIV or AIDS was as a resident of Iowa and who were reported to be living as of December 31, 2011. Persons are counted only once. All deaths may not have been reported.

The comparatively small numbers of minorities in the state explain the seeming paradox of small *numbers* of diagnoses but high *rates* of diagnosis and prevalence. Relatively small minority populations in the state result in low numbers of diagnoses when compared to the much larger white, non-Hispanic population. Despite the low numbers of diagnoses, the impact of high infection rates within a small population can be devastating to that population. For that reason, diagnoses per 100,000 population must be considered along with absolute numbers when prioritizing specific populations for prevention and care activities.

***Summary of Race and Ethnicity Data:***

- Black, non-Hispanic males, black, non-Hispanic females, and Hispanic males are over-represented among HIV and AIDS diagnoses when their population sizes are taken into account. Black, non-Hispanic males have HIV diagnosis rates more than eight times higher than white, non-Hispanic males. Hispanic males have a HIV diagnosis rate over three times that of white, non-Hispanic males.
- Black, non-Hispanic females had the highest rate of diagnosis of any racial and ethnic group among females in 2011. Their rate was almost 18 times higher than white, non-Hispanic females.
- Absolute numbers, rates (per 100,000 population), and changes in prevalence from previous years may need to be considered when prioritizing populations for prevention and care. Despite seemingly low numbers of diagnoses, HIV infection is having a very profound impact on certain minority populations in the state.
- The effects of high diagnosis rates in small populations can be especially profound. Black, non-Hispanic persons, both males and females, and Hispanic males are experiencing HIV and AIDS rates unparalleled among white, non-Hispanic persons. If the prevalence of HIV and AIDS seen among black, non-Hispanic males were experienced by all racial and ethnic groups in Iowa, over 15,893 Iowans would now be diagnosed and living with HIV disease in the state.
- Despite the impact of HIV and AIDS on black, non-Hispanic persons and Hispanic males, the overwhelming majority of diagnoses are among white, non-Hispanic persons. This is explained by the very large white, non-Hispanic population compared to other groups in the state. A significant share of resources for prevention and planning may, therefore, be appropriate. However, targeting limited resources to these disproportionately affected populations should be considered. A comprehensive picture of the epidemic can be presented only by examining both numbers and rates.



## HIV AND AIDS BY EXPOSURE CATEGORY

Behavioral and health histories of persons infected with HIV are reported by health care providers and are also collected through interviews with recently diagnosed persons. Behaviors and risk histories are ranked according to probability of HIV transmission and a new case is categorized according to that probability. Exposure categories include men who have sex with men and inject drugs (MSM/IDU), men who have sex with men (MSM), injection drug use (IDU), heterosexual contact with a person with a documented HIV infection, hemophilia, transplant/transfusion recipient, no identified risk (NIR), and other risk (e.g., occupational exposures such as needle sticks or exposures to blood). For surveillance purposes, HIV and AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for men with both a history of sexual contact with other men and a history of injection drug use. They make up a separate category.

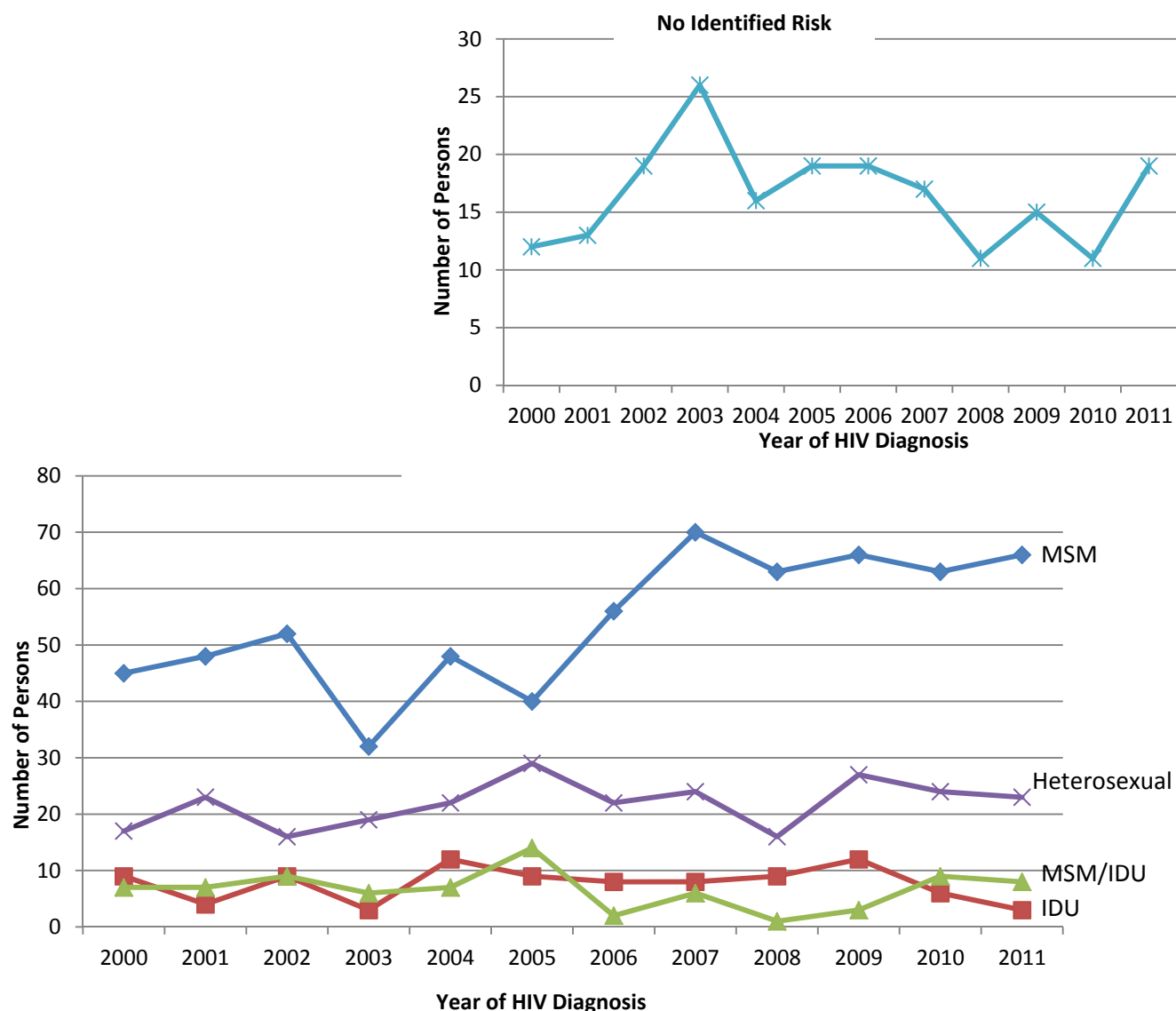
It is important to keep in mind that the category “heterosexual contact” is likely to be underestimated, particularly for women and foreign-born persons. “Heterosexual contact” includes persons who report specific heterosexual contact with a person with *documented* HIV infection, or heterosexual contact with a person at increased risk for HIV infection, such as an injection drug user, person with hemophilia, transfusion recipient with documented HIV infection, or bisexual male. A person who reports heterosexual contact with partners whose specific HIV risks and HIV status are unknown is considered to have “no risk reported or identified” (NIR). Adults and adolescents born, or who had sex with someone born, in a country where heterosexual exposure was believed to be the predominant mode of HIV transmission (formerly classified as Pattern-II countries by the World Health Organization) are no longer classified as having heterosexually acquired HIV. Similar to case reports for other persons who are reported without behavioral or transfusion risks for HIV, these reports are now classified (in the absence of other risk information that would classify them in another exposure category) as “NIR” (MMWR 1994:43:155-60). In the future, a category of ‘presumed heterosexual transmission’ may be allowed for women who have specifically denied IDU and have acknowledged only heterosexual sex.

### Exposure Category – HIV Diagnoses

Figure 36 shows total HIV diagnoses from 2000 to 2011 by mode of exposure. Male-to-male sex remains the predominant mode of exposure in Iowa. The number of diagnoses among men who have sex with men (MSM) has increased considerably from 45 diagnoses in 2000 to a high of 66 in 2011. Diagnoses among men who have sex with men and also inject drugs (MSM/IDU) have been increasing since 2008 and, in 2010, surpassed diagnosis among injection drug users (IDU). Diagnoses among injection drug users, which had remained relatively steady in Iowa from 2000 through 2009, declined sharply in 2010 and again in 2011.



**Figure 36**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category**  
**2000 through 2011**



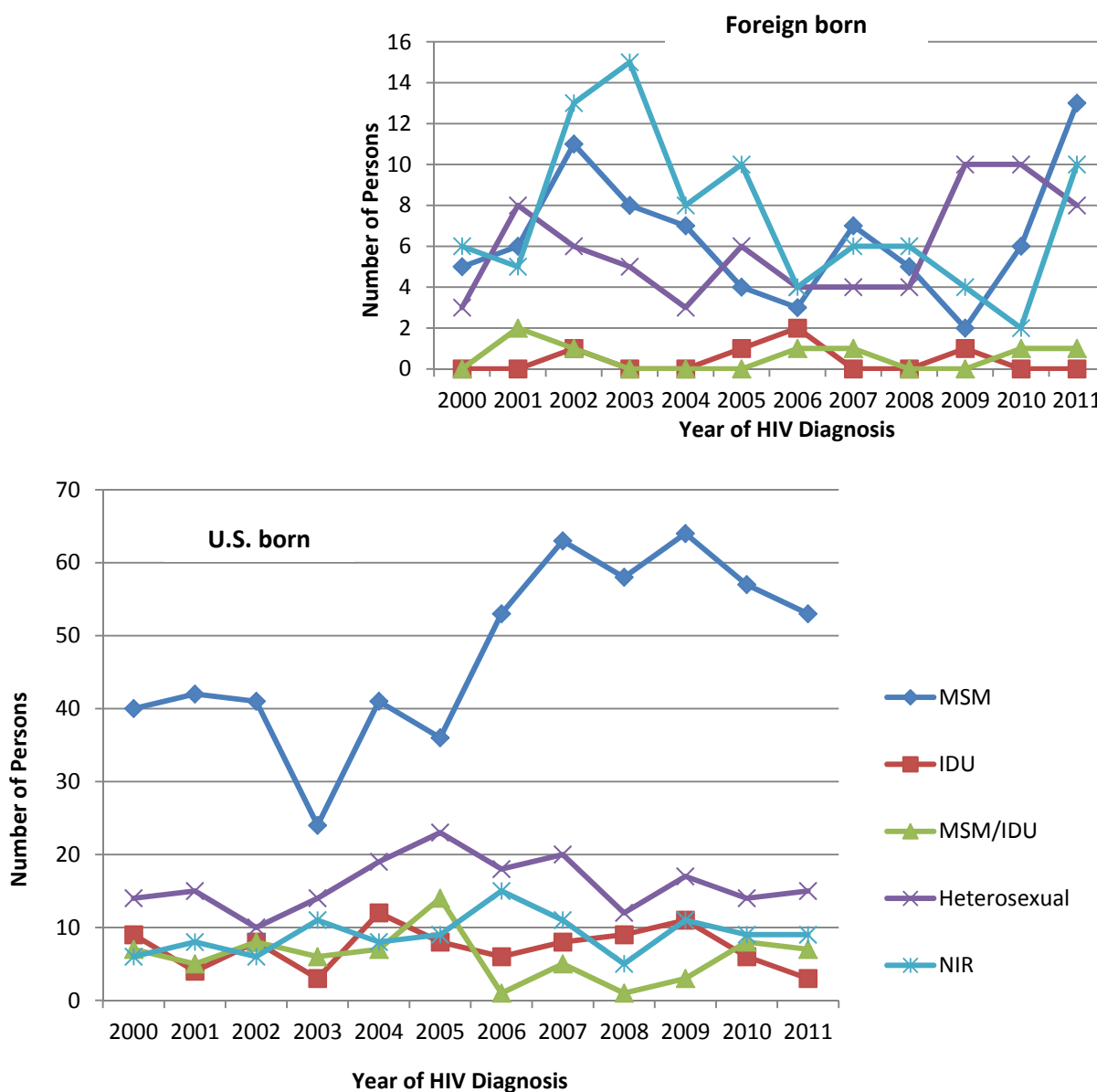
<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time of diagnosis. However, exposure to HIV may have been at a younger age.

Diagnoses among persons reporting heterosexual exposure have remained steady throughout this period. Of those with a known mode of exposure, heterosexual contact is the second most common route of infection.

Persons reported without an identifiable risk had shown a general decline from 2004 through 2010, only to increase again in 2011 (Figure 36 inset). Many persons initially reported with unidentified risk are reclassified over time as more information becomes available. Reclassification can substantially alter interpretations of trends among other exposure categories.

Because foreign-born persons with HIV are more likely to be females and minorities, exposure categories may vary from those for U.S.-born persons with HIV. Figure 37 shows diagnoses of HIV by country of origin and exposure category

**Figure 37**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category and Country of Origin**  
**2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time. However, exposure to HIV may have been at a younger age.

The three major exposure categories for foreign-born persons are heterosexual contact, male-to-male sex, and no identified risk. In 2003, foreign-born persons accounted for 59% of all persons without an identified risk. More than half of the foreign-born persons diagnosed that year did not have a risk identified. Mode of exposure to HIV in foreign countries is more likely to be unknown for several reasons. Poorer access to testing in many foreign countries means that the HIV status of heterosexual partners is not documented, which is needed for categorization into the heterosexual classification. Medical interventions, including injections with contaminated needles, have also been implicated as more frequent sources of exposure in some countries. These interventions are difficult to document and would not qualify as risks in the United States without documentation. However, in 2011 male-to-male sex became the major route of exposure among foreign-born persons.

Plotting U.S.-born and foreign-born persons separately shows that male-to-male sex has remained the predominant mode of exposure among U.S.-born persons (Figure 37). While diagnoses of HIV in U.S.-born persons with heterosexual contact increased from 2002 to 2005, the overall pattern from 2000 through 2011 is one of relative steadiness. Table 16 characterizes adult and adolescent HIV diagnoses in 2011 by exposure category and country of origin.

**Table 16**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> in 2011,**  
**by Exposure Category and Country of Origin**

Exposure Category	All Persons		U.S.-born		Foreign-born	
	#	(%)	#	(%)	#	(%)
MSM	66	(55)	53	(61)	13	(41)
IDU	3	(3)	3	(3)	0	--
MSM/IDU	8	(7)	7	(8)	1	(3)
Heterosexual	23	(19)	15	(17)	8	(25)
Transfusion/transplant	0	--	0	--	0	--
NIR/other	19	(16)	9	(10)	10	(31)
<b>Total</b>	<b>119</b>		<b>87</b>		<b>32</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time. However, exposure to HIV may have been at a younger age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Fifty-five percent of all adult and adolescent HIV diagnoses in 2011 were among men who reported male-to-male sexual contact. Of the 66 males reporting MSM, 53 of those were U.S.-born. Heterosexual contact accounted for 19% of all diagnoses. Persons in the “no identified risk” category accounted for 16% of diagnoses overall.

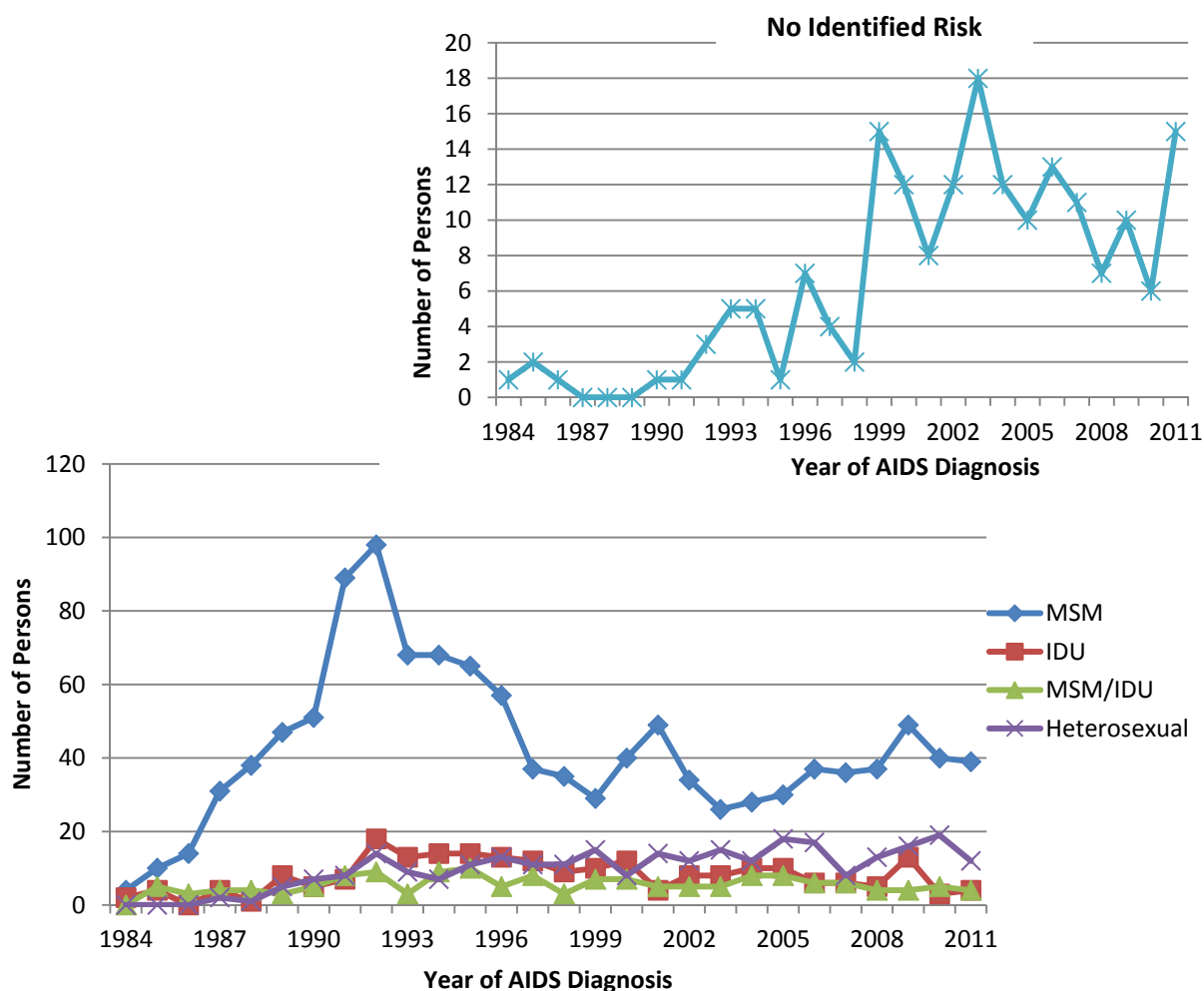
The year 2011 was the first in which male-to-male sexual contact accounted for a majority of diagnoses in the foreign born. Another 25% of foreign-born diagnoses were attributed to heterosexual contact.

As previously noted, many persons initially reported with unidentified risk are reclassified over time as more information becomes available. However, as described above, CDC's guidelines for risk ascertainment are stringent and make documentation of risk for women and the foreign born difficult to accomplish.

### Exposure Category – AIDS Diagnoses

Men who have sex with men have historically accounted for the largest numbers of adult and adolescent AIDS cases in Iowa (Figure 38). Numbers of diagnoses in this group, however, peaked at 98 in 1992, fell to a low of 29 in 1999, peaked again in 2001, and fell to a second low of 28 in 2003. Since then, AIDS diagnoses among MSM have been on the rise, with a peak of 49 in 2009.

**Figure 38**  
**Iowa Adult and Adolescent Diagnoses of AIDS<sup>1</sup> by Exposure Category**  
**1984 through 2011**



<sup>1</sup> AIDS diagnoses reflect all persons diagnosed with AIDS for the first time who were residents of Iowa at diagnosis and who were  $\geq 13$  years of age at the time. However, exposure to HIV may have been at a younger age.

Diagnoses of AIDS among injection drug users declined from their peak of 18 in 1992 to a low of four in 2011. Diagnoses of AIDS among persons with heterosexual contact have gradually increased since 1984. Since 2002, 124 AIDS diagnoses have occurred among persons with no known risk. While reclassification of risk for a large number of these diagnoses seems unlikely, such an occurrence could have a substantial impact on trends.

In 2011, 20% of AIDS cases diagnosed had no risk identified (Table 17). This is more than double the percentage of cumulatively reported AIDS cases that had no risk identified. However, it is possible that risk could be obtained over time on many of the individuals diagnosed in 2011.

Table 17 shows some significant differences in proportions between cumulative AIDS diagnoses and diagnoses in 2011. These differences reflect the trends seen in Figure 38 above; recent decreases in diagnoses among men who have sex with men and among injection drug users, and increases among heterosexuals and persons with unidentified risk.

**Table 17**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> in 2011**  
**and Cumulatively through 2011, by Exposure Category**

<b>Exposure Category</b>	<b>2011</b>		<b>Cumulative</b>	
	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
MSM	39	(53)	1,186	(57)
IDU	4	(5)	223	(11)
MSM/IDU	4	(5)	153	(7)
Hemophilia	0	--	45	(2)
Heterosexual	12	(16)	278	(13)
Transfusion/transplant	0	--	23	(1)
NIR/other	15	(20)	182	(9)
<b>Total</b>	<b>74</b>		<b>2,090</b>	

<sup>1</sup> Adult and adolescent AIDS diagnoses reflect all persons diagnosed with AIDS for the first time who were residents of Iowa at diagnosis and who were 13 or more years of age at the time. However, exposure to HIV could have been at any age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

### **Exposure Category – Persons Living with HIV and AIDS**

Numbers of persons living with HIV or AIDS (PLWHA) by exposure category are shown in Table 18. True prevalence, or PLWHA per 100,000 population, cannot be calculated because the population sizes are unknown. That is, there is no census of injection drug users or men who have sex with men in Iowa.

Just over half of all persons living with HIV or AIDS in Iowa are men who have sex with men. Heterosexual exposure is the second most common exposure, with 19% of persons living with HIV or AIDS reporting this risk. Injection drug users account for 9% of all persons living with HIV or AIDS. Twelve percent of persons living with HIV or AIDS had no risk identified.

**Table 18**  
**Persons Living with HIV or AIDS<sup>1</sup> as of December 31, 2011**  
**by Exposure and Country of Origin**

Exposure Category	All Persons		U.S.-born		Foreign-born	
	#	(%)	#	(%)	#	(%)
MSM	991	(51)	898	(55)	93	(31)
IDU	178	(9)	170	(10)	8	(3)
MSM/IDU	138	(7)	130	(8)	8	(3)
Hemophilia	12	--	12	--	0	--
Heterosexual	360	(19)	278	(17)	82	(28)
Transfusion/transplant	11	--	11	--	0	--
Mother with HIV infection	17	--	13	--	4	--
NIR/other	232	(12)	131	(8)	101	(34)
<b>Total</b>	<b>1,939</b>		<b>1,643</b>		<b>296</b>	

<sup>1</sup> Reflects persons first diagnosed with HIV or AIDS as a resident of Iowa and who were living as of December 31, 2011. All deaths may not have been reported.

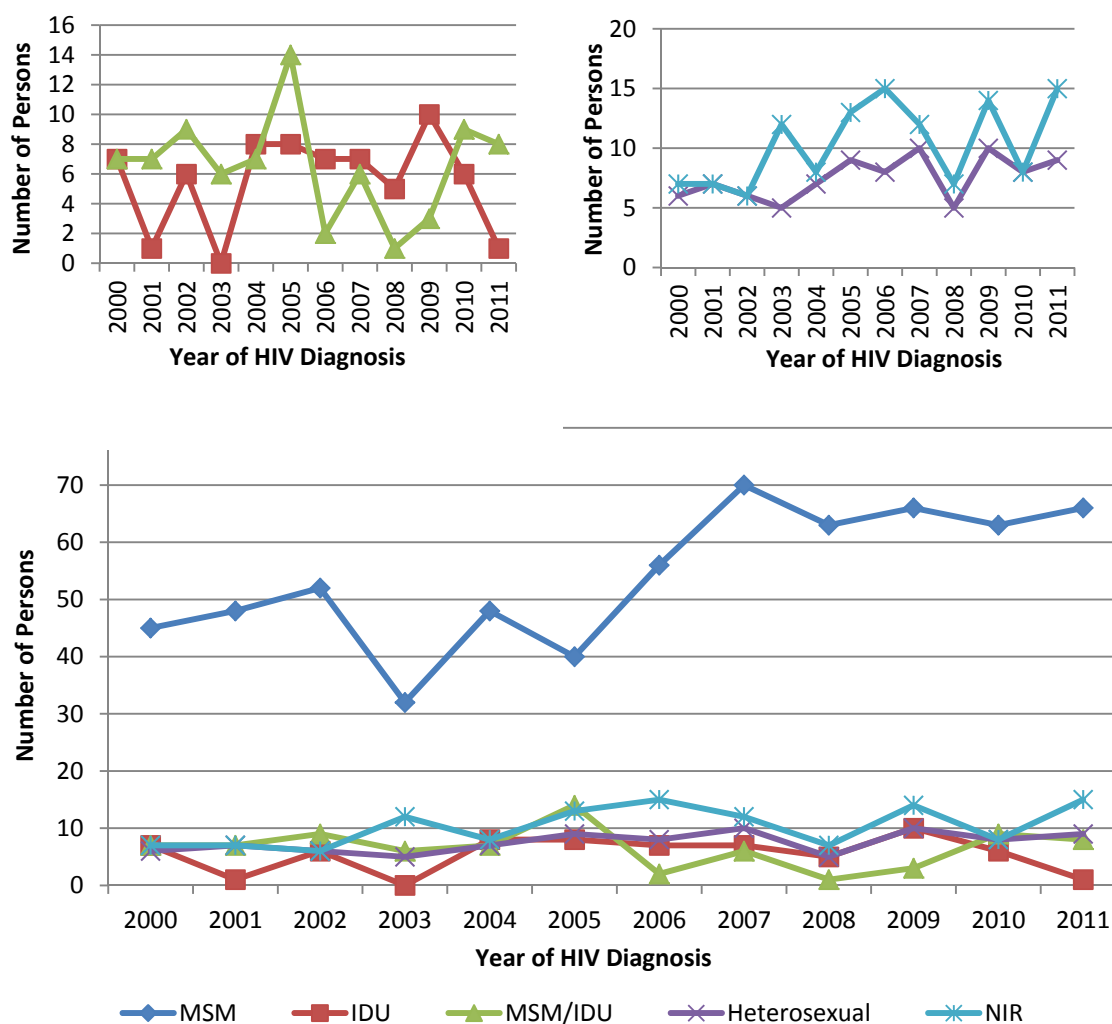
Risk could not be ascertained for a third (34%) of foreign-born persons living with HIV or AIDS (PLWHA) compared to only 9% of U.S.-born PLWHA. Men having sex with men (31%) is the second most common exposure category for foreign persons, followed by heterosexual contact (28%).

### Exposure Category and Gender – HIV Diagnoses

Because such a large proportion of all HIV and AIDS cases are attributed to one gender and exposure category (MSM), it is helpful to examine exposure data separately by gender to give a better picture of how other groups are being affected.

Diagnoses of HIV infection for all adult and adolescent males by exposure are shown by year in Figure 39. Insets show exposure groups with small numbers of diagnoses. Diagnoses among nearly all groups do not follow a clear pattern except for diagnoses among MSM which have been increasing irregularly since 2003, peaking at 70 in 2007, and averaging 66 diagnoses annually for the five years 2007 through 2011. Numbers of males exposed through hemophilia, transfusion, and transplants were very low and are not shown in Figure 39.

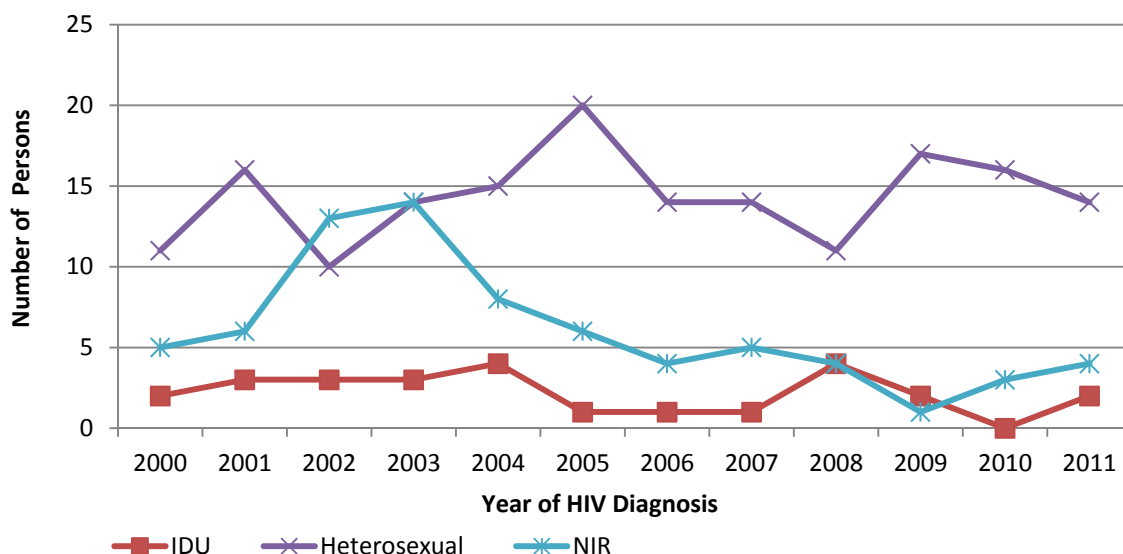
**Figure 39**  
**Iowa HIV Diagnoses by Exposure Category**  
**Adult and Adolescent<sup>1</sup> Males, 2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and who were  $\geq 13$  years of age at diagnosis. However, exposure to HIV may have been at a younger age.

Diagnoses of HIV infection by exposure category among females are shown in Figure 40. Heterosexual contact was the most common mode of exposure between 2003 and 2011. During that interval, heterosexual diagnoses ranged from 11 to 20, with a median of 16 and a mean of 15. Diagnoses of females in the no identified risk group decreased steadily from a peak of 14 diagnoses in 2003 to only 1 diagnosis in 2009.

**Figure 40**  
**Iowa HIV Diagnoses for by Exposure Category for**  
**Adult and Adolescent<sup>1</sup> Females 2000 through 2011**



<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV may have occurred at a younger age.

Exposure category by gender and country of origin for adult and adolescent HIV diagnoses in 2011 is shown in Table 19. Two-thirds of diagnoses among adult and adolescent males were among men who have sex with men. Another 8% were among men who have sex with men and inject drugs. Only one diagnosis in males in 2011 reported injection drug use as a mode of exposure. No risk was identified for 15% of all adult and adolescent males. In terms of country of origin, no risk was identified for 9% of U.S.-born males and 31% of foreign-born males.

Among adult and adolescent females diagnosed in 2011, the largest proportion, 70%, indicated heterosexual contact as their likely mode of exposure, meaning that they could identify a male partner with significant risk factors or with documented HIV infection. No risk was identified for 20% of all adult and adolescent females. In terms of country of origin, the data were similar to that for males. No risk was found for 8% of U.S.-born females and 43% of foreign-born females.



**Table 19**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> in 2011**  
**by Exposure Category, Gender, and Country of Origin**

<b>Exposure Category- Males</b>	<b>All Persons</b>		<b>U.S.-born</b>		<b>Foreign-born</b>	
	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
MSM	66	(67)	53	(72)	13	(52)
IDU	1	(1)	1	(1)	0	--
MSM/IDU	8	(8)	7	(9)	1	(4)
Heterosexual contact	9	(9)	5	(7)	4	(16)
NIR/other	15	(15)	8	(11)	7	(28)
<b>Total Males</b>	<b>99</b>		<b>74</b>		<b>25</b>	

<b>Exposure Category-Females</b>						
IDU	2	(10)	2	(15)	0	--
Heterosexual contact	14	(70)	10	(77)	4	(57)
NIR/ other	4	(20)	1	(8)	3	(43)
<b>Total Females</b>	<b>20</b>		<b>13</b>		<b>7</b>	

<sup>1</sup> HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, who were residents of Iowa at diagnosis and were  $\geq 13$  years of age at the time. However, exposure to HIV may have occurred at a younger age.

Ascertaining modes of exposure for persons recently diagnosed with HIV is a priority for the Iowa Department of Public Health. Clearly, trends can be misinterpreted when 15% of the recent cases have no risk associated with them. Some of the cases diagnosed in 2011 without a known risk, particularly those among U.S.-born persons, will have modes of exposure determined in the coming year, as partners are tested and new information becomes available. Therefore the number of NIR cases diagnosed among U.S. born in 2011 will decrease when plotted in subsequent years.

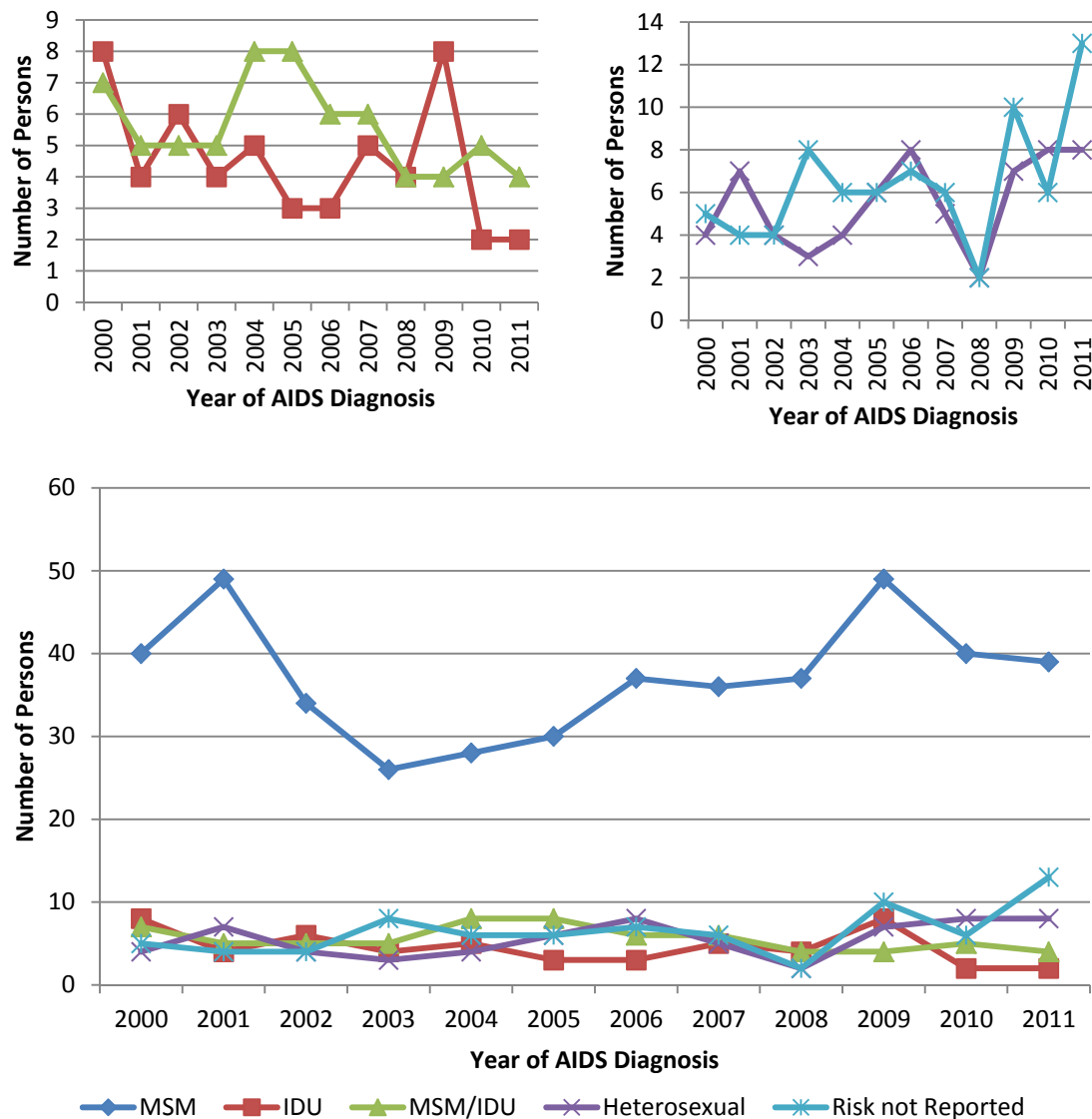
Identifying risks for foreign-born persons, however, is more difficult. Many people do not remember specific medical interventions, may have been unaware of immunizations or other injections with needles that may have been contaminated, or may have had sexual partners in those countries who are unavailable for testing.

### **Exposure Category and Gender – Adult and Adolescent AIDS Diagnoses**

Among cumulative (through 2011) adult and adolescent ( $\geq 13$  years of age) AIDS diagnoses, 85% of males report having sex with men and/or injecting drugs as their mode of exposure (Figure 41 and Table 20). The number of AIDS diagnoses among males exposed through male-to-male sexual contact alone increased from 26 in 2003 to 49 in 2009, but has been decreasing since. From 2000 to 2011, the number of diagnoses attributed to IDU peaked twice at eight, once in 2000, and again in 2009. Diagnoses among MSM/IDU have been decreasing since 2004. Male AIDS diagnoses due to heterosexual contact among males have been increasing since 2008

and accounted for 12% of male AIDS diagnoses in 2011 (Table 20). Numbers of diagnoses among adult and adolescent males with no identified risk have fluctuated in recent years but have trended upward since 2008. Reclassification of risk for many will likely occur over time.

**Figure 41**  
**Iowa AIDS Diagnoses by Exposure Category**  
**Adult and Adolescent<sup>1</sup> Males, 2000 through 2011**



<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV may have occurred at an earlier age.

**Table 20**  
**Iowa AIDS Diagnoses by Exposure Category and Gender**  
**Adults and Adolescents<sup>1</sup>, 2011 and Cumulatively<sup>2</sup> through 2011**

<b>Exposure Category- Males</b>	<b>2011</b>		<b>Cumulative<sup>2</sup></b>	
	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
MSM	39	(59)	1,186	(67)
IDU	2	(3)	159	(9)
MSM/IDU	4	(6)	153	(9)
Hemophilia	0	--	44	(2)
Heterosexual contact	8	(12)	101	(6)
Transfusion/transplant	0	--	13	(1)
NIR/other	13	(20)	118	(7)
<b>Total Males</b>	<b>66</b>		<b>1,774</b>	

<b>Exposure Category-Females</b>				
IDU	2	(25)	64	(20)
Hemophilia	0	--	1	--
Heterosexual contact	4	(50)	177	(56)
Transfusion/transplant	0	--	10	(3)
NIR/other	2	(25)	64	(20)
<b>Total Females</b>	<b>8</b>		<b>316</b>	

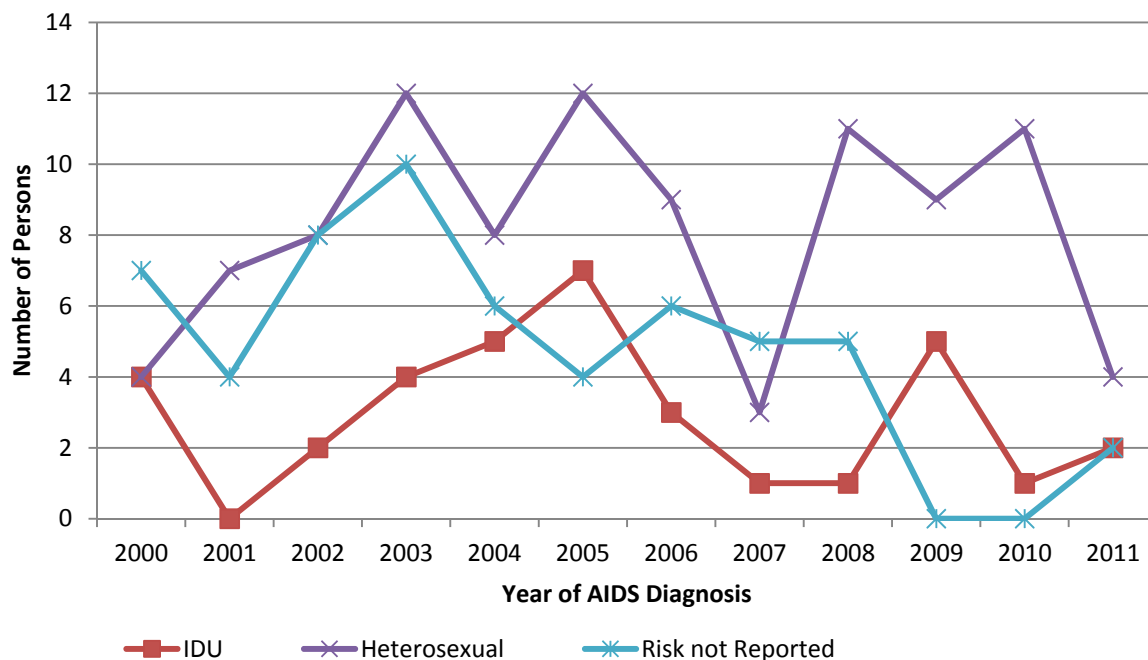
<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV may have occurred at less than 13 years of age.

<sup>2</sup> Cumulative data include persons diagnosed from 1982 through 2011.

Among female adult and adolescent AIDS cases, heterosexual contact is the most frequent mode of exposure, accounting for 56% of cumulative AIDS cases (Table 20). The number of cases attributed to heterosexual contact has been fairly steady with peaks seen in 2003 and 2005 (Figure 42).

Cases among females who reported injection drug use have numbered seven or fewer each year since 2000. Cumulatively, injection drug use accounts for 20% of all female AIDS cases. There has been only one female infected with AIDS as a result of hemophilia and only one infected as a result of a documented occupational exposure (classified as “other”). In 2011, two females diagnosed with AIDS had no risk identified; cumulatively, 20% of females do not have an identified risk.

**Figure 42**  
**Iowa AIDS Diagnoses by Exposure Category**  
**Adult and Adolescent Females<sup>1</sup>, 2000 through 2011**



<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV may have occurred at less than 13 years of age. Transfusion/ transplant and hemophilia cases are not shown.

### Exposure Category and Gender – Persons Living with HIV and AIDS

Exposure categories by gender are shown in Table 21 for adults and adolescents (persons whose exposure occurred at age 13 years or older) living with HIV or AIDS.

Among adult and adolescent males living with HIV disease, 65% were infected through male-to-male sex, 9% were MSM/IDU, and 8% were IDU. More than 80% of all injection drug users (MSM/IDU and IDU) living with HIV or AIDS are male.

Over half of all living adult and adolescent females with HIV disease were infected through heterosexual contact. Another 16% were infected through injection drug use. No risk has been identified for 21% of adult and adolescent females living with HIV or AIDS. This compares to only 10% of males who have no risk identified. The higher percentage for females can be attributed to the higher probability that a woman will be exposed through heterosexual sex and the requirement that a risk be documented for the partner. In the future, a category of “presumed heterosexual transmission” will be allowed for women who deny IDU and have no risk other than heterosexual sex.

**Table 21**  
**Persons Diagnosed as Adults or Adolescents<sup>1</sup> and**  
**Living with HIV or AIDS as of December 31, 2011**  
**by Exposure Category and Gender**

<b>Exposure Category-Males</b>	<b>Prevalence</b>	
	<b>#</b>	<b>(%)</b>
MSM	991	(65)
IDU	117	(8)
MSM/IDU	138	(9)
Hemophilia	8	--
Heterosexual Contact	119	(8)
Transfusion/transplant	7	--
NIR/other	151	(10)
<b>Total Males</b>	<b>1,531</b>	

<b>Exposure Category-Females</b>		
IDU	61	(16)
Hemophilia	0	--
Heterosexual Contact	241	(62)
Transfusion/ transplant	3	--
NIR/other	81	(21)
<b>Total Females</b>	<b>386</b>	

<sup>1</sup> Includes all persons who were first diagnosed with HIV or AIDS while residents of Iowa, who were  $\geq 13$  years of age at diagnosis, and were living with HIV or AIDS as of December 31, 2011. Exposure to HIV may have occurred at less than 13 years of age. All deaths may not have been reported.

Percentage totals may not equal 100 due to rounding. Percentages are not shown for small numbers.

### **Exposure Category and Race – Five Years of HIV Diagnoses, 2007 through 2011**

To explore links between mode of exposure and race and ethnicity, we analyze HIV diagnoses for the five year period from January 1, 2007, through December 31, 2011. Adult and adolescent HIV diagnoses by exposure category, race, and ethnicity are presented in Table 22.

Differences in modes of exposure are evident between racial and ethnic groups. MSM accounted for the highest proportions of cases among white, non-Hispanic persons, black, non-Hispanic persons, and Hispanic persons. However, the MSM proportion (64%) is highest among white, non-Hispanic persons, followed in order by Hispanic persons (54%), and black, non-Hispanic persons (36%). Black, non-Hispanic persons and Hispanic persons have higher proportions of heterosexual contact and no identified risks than do white, non-Hispanic persons.

**Table 22**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category, Race and Ethnicity**  
**January 1, 2007 through December 31, 2011**

Exposure Category	White Non- Hispanic		Black Non- Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	250	(64)	38	(36)	27	(54)	12	(38)	327	(56)
IDU	28	(7)	8	(8)	1	(2)	1	(3)	38	(7)
MSM/IDU	23	(6)	0	--	2	(4)	2	(6)	27	(5)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	57	(15)	36	(34)	12	(24)	9	(28)	114	(20)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/Other	33	(8)	24	(23)	8	(16)	8	(25)	73	(13)
<b>Totals</b>	<b>391</b>		<b>106</b>		<b>50</b>		<b>32</b>		<b>579</b>	

<sup>1</sup> Includes all persons who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were ≥ 13 years of age at diagnosis. Exposure to HIV may have occurred at a younger age.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

The data in Table 22 highlight that there are really many epidemics occurring simultaneously in different populations. It follows that there must be many approaches to prevention. The large proportion of black, non-Hispanic persons (23%) who have no risk identified is a barrier to understanding how this community is being exposed to HIV. Similarly, 16% of all Hispanic persons also had no risk identified, compared to only 8% for white, non-Hispanic persons.

Modes of exposure within a racial or ethnic group may vary by country of origin as well. Twenty-eight percent of black, non-Hispanic persons and 84% of Hispanic persons diagnosed from January 1, 2007, through December 31, 2011, were foreign-born. Table 23 presents HIV diagnoses separately for foreign- and U.S. - born black, non-Hispanic and Hispanic persons.

**Table 23**  
**Minority Adult and Adolescent HIV Diagnoses<sup>1</sup> by Exposure Category, Race, Ethnicity**  
**and Country of Origin**  
**January 1, 2007 through December 31, 2011**

Exposure Category	Black, non-Hispanic				Hispanic			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
	#	(%)	#	(%)	#	(%)	#	(%)
MSM	37	(40)	1	(3)	5	(63)	22	(52)
IDU	8	(11)	0	--	1	(13)	0	--
MSM/IDU	0	--	0	--	0	--	2	(5)
Hemophilia	0	--	0	--	0	--	0	--
Heterosexual	19	(25)	17	(57)	2	(25)	10	(24)
Transfusion/transplant	0	--	0	--	0	--	0	--
NIR/other	12	(16)	12	(40)	0	--	8	(19)
<b>Total</b>	<b>76</b>		<b>30</b>		<b>8</b>		<b>42</b>	

<sup>1</sup> Includes all persons who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were ≥ 13 years of age at diagnosis. Exposure to HIV may have occurred at a younger age.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 23 indicates that among U.S.-born black, non-Hispanic persons (i.e., African Americans), men who have sex with men is the most common mode of exposure accounting for 40% of the cases. Among black, non-Hispanic foreign born persons, heterosexual contact is the most common mode of exposure and accounts for 57% of cases. A much lower percentage of cases have risks unidentified than it appeared when foreign-born, black, non-Hispanic persons were included. Sixteen percent of African-Americans have no identified risk, twice that of white, non-Hispanic persons. However 40% of foreign born black, non-Hispanic persons have no identified risk. Clearly, the difficulties in obtaining risk information from foreign-born persons severely limit understanding of the epidemic in this population.

Similarly, foreign-born Hispanics were more likely to have no risk identified than U.S.-born Hispanics. U.S.-born Hispanics were more likely to have been MSM, and there is no difference in proportional exposure through heterosexual contact between the two groups.

### Exposure Category and Race – Cumulative AIDS Diagnoses

Differences between racial and ethnic groups are also evident among cumulative AIDS diagnoses (Table 24). A lower proportion of AIDS diagnoses among black, non-Hispanic persons has been attributed to MSM and a higher proportion attributed to injection drug use and heterosexual contact than among white, non-Hispanic persons. The proportion of diagnoses among Hispanic persons attributed to MSM is less than among white, non-Hispanic persons. However, exposure category is unknown for 17% of Hispanics, more than twice that of white, non-Hispanic persons. There was a higher proportion of diagnoses among Hispanic heterosexuals than in the white, non-Hispanic population. However, MSM are the highest proportion in all racial and ethnic groups.

**Table 24**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> by Exposure Category, Race, and Ethnicity**  
**Cumulative through December 31, 2011**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	1,003	(63)	93	(31)	70	(48)	20	(59)	1,186	(57)
IDU	149	(9)	59	(20)	13	(9)	2	(5)	223	(11)
MSM/IDU	124	(8)	17	(6)	7	(5)	5	(12)	153	(7)
Hemophilia	44	(2)	1	--	0	--	0	--	45	(2)
Heterosexual	171	(11)	71	(24)	30	(21)	6	(15)	278	(13)
Transfusion/transplant	21	(1)	2	(1)	0	--	0	--	23	(1)
NIR/other	95	(6)	54	(18)	25	(17)	8	(20)	182	(9)
<b>Total</b>	<b>1,607</b>		<b>297</b>		<b>145</b>		<b>41</b>		<b>2,090</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at diagnosis. However, exposure to HIV may have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Comparison of HIV diagnoses after 2006 (Table 22) with cumulative AIDS cases (Table 24) reveals almost no difference in the proportion of MSM among HIV diagnoses and cumulative AIDS cases for white, non-Hispanic persons, black, non-Hispanic persons and Hispanic persons. More heterosexual transmission is now occurring than in the past among these racial and ethnic groups. Persons with more recent diagnoses are less likely to have a risk identified.

### Exposure Category by Race, Ethnicity, and Gender – HIV Diagnoses 2007 through 2011

To examine differences in modes of exposure between racial and ethnic groups for each gender, five years of data were examined. Among males diagnosed with HIV since January 1, 2007, MSM is the primary exposure for all reported races and ethnic groups (Table 25). When MSM is considered as a separate category (exclusive of MSM/IDU), 68% of exposures among adult and adolescent males diagnosed with HIV infection since January 1, 2007, have involved male-to-male sex. However, 55% of black, non-Hispanic men diagnosed with HIV identified as MSM compared to 73% of white, non-Hispanic men and 64% of Hispanic males. Higher proportions of black, non-Hispanic males reported heterosexual contact or were unable to identify risk than white, non-Hispanic or Hispanic males. Sixteen percent of black, non-Hispanic males had no risk identified.

**Table 25**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> among Males**  
**by Exposure Category, Race and Ethnicity, January 1, 2007 through December 31, 2011**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	250	(73)	38	(55)	27	(64)	12	(46)	327	(68)
IDU	22	(6)	6	(9)	0	--	1	(4)	29	(6)
MSM/IDU	23	(7)	0	--	2	(5)	2	(8)	27	(6)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	19	(6)	14	(20)	5	(12)	4	(15)	42	(9)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/other	30	(9)	11	(16)	8	(19)	7	(27)	56	(12)
<b>Total Males</b>	<b>344</b>		<b>69</b>		<b>42</b>		<b>26</b>		<b>481</b>	

<sup>1</sup> Includes all persons who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were ≥ 13 years of age at time of diagnosis. Exposure to HIV may have occurred at less than 13 years of age.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

No racial or ethnic group had more than 10% of diagnoses among injection drug users when IDU is considered as a separate category. Black, non-Hispanic males were only slightly more likely than males of other races and ethnicities to be injection drug users. However, seven percent of white, non-Hispanic males reported histories of sex with males and injection drug use. This means that up to 13% of diagnoses among white, non-Hispanic males could have been exposed through injection drug use, compared to only 9% of black, non-Hispanic males and 5% of Hispanic males.



Data from the most recent five years of HIV diagnoses for adult and adolescent females are shown in Table 26. Heterosexual contact was the most common risk for all reported races and ethnic groups. Thirty-five percent of black, non-Hispanic females had no risk identified. Heterosexual transmission is likely to be the most important mode of exposure among all adult and adolescent females.

**Table 26**  
**Iowa Adult and Adolescent HIV Diagnoses<sup>1</sup> among Females**  
**by Exposure Category, Race and Ethnicity, January 1, 2007 through December 31, 2011**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
IDU	6	(13)	2	(5)	1	(13)	0	--	9	(9)
Hemophilia	0	--	0	--	0	--	0	--	0	--
Heterosexual	38	(81)	22	(59)	7	(88)	5	(83)	72	(73)
Transfusion/transplant	0	--	0	--	0	--	0	--	0	--
NIR/other	3	(6)	13	(35)	0	--	1	(17)	17	(17)
<b>Total Females</b>	<b>47</b>		<b>37</b>		<b>8</b>		<b>6</b>		<b>98</b>	

<sup>1</sup> Includes all persons who were first diagnosed with HIV, regardless of AIDS status, while residents of Iowa and who were  $\geq$  13 years of age at diagnosis. Exposure to HIV could have occurred at less than 13 years of age.

Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

### Exposure Category by Race, Ethnicity, and Gender – Cumulative AIDS Diagnoses

Cumulative adult and adolescent AIDS cases by exposure, race/ethnicity, and gender are shown in Tables 27 and 28. Because of larger numbers, comparisons between racial and ethnic groups are more valid using cumulative AIDS cases than with HIV diagnoses. In addition, there are considerably fewer cases with no identified risk, only 7% overall. However, many of these persons were diagnosed a considerable time ago. Therefore, conclusions drawn from the comparisons may not still be valid for more recently infected persons.

Table 27 indicates that nearly three-fourths of all AIDS diagnoses among white, non-Hispanic males were MSM. Among black, non-Hispanic males diagnosed with AIDS, only 45% were MSM. Eighteen percent of black, non-Hispanic men reported injection drug exposure, more than double the proportion reported in white, non-Hispanic males. Historically speaking, injection drug use has contributed to a significantly larger proportion of AIDS cases among black, non-Hispanic males than among other racial and ethnic groups, but this is not the case for persons more recently diagnosed with HIV infection (Table 25).

**Table 27**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> among Males**  
**by Exposure Category, Race and Ethnicity: Cumulative through December 31, 2011**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
MSM	1,003	(71)	93	(45)	70	(58)	20	(57)	1,186	(67)
IDU	111	(8)	36	(18)	11	(9)	1	(3)	159	(9)
MSM/IDU	124	(9)	17	(8)	7	(6)	5	(14)	153	(9)
Hemophilia	43	(3)	1	--	0	--	0	--	44	(2)
Heterosexual	52	(4)	31	(15)	15	(12)	3	(9)	101	(6)
Transfusion/transplant	13	(1)	0	--	0	--	0	--	13	(1)
NIR/other	67	(5)	27	(13)	18	(15)	6	(17)	118	(7)
<b>Total Males</b>	<b>1,413</b>		<b>205</b>		<b>121</b>		<b>35</b>		<b>1,774</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at time of diagnosis. However, exposure to HIV could have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

Table 28 shows cumulative adult and adolescent AIDS diagnoses among females by race and ethnicity. Heterosexual risk is the primary risk among females for all races and ethnicities. Twenty-nine percent of Hispanic females and 29% of black, non-Hispanic females diagnosed with AIDS did not have a risk identified. Injection drug use may have played a slightly larger role in the AIDS epidemic among black, non-Hispanic females than the other groups, but the sizable number of women without a risk makes comparisons between racial and ethnic groups very difficult.

**Table 28**  
**Iowa Adult and Adolescent AIDS Diagnoses<sup>1</sup> among Females**  
**by Exposure Category, Race and Ethnicity: Cumulative through December 31, 2011**

Exposure Category	White non-Hispanic		Black non-Hispanic		Hispanic		Other		All Groups	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
IDU	38	(20)	23	(25)	2	(8)	1	(17)	64	(20)
Hemophilia	1	(1)	0	--	0	--	0	--	1	--
Heterosexual	119	(61)	40	(43)	15	(63)	3	(50)	177	(56)
Transfusion/transplant	8	(4)	2	(2)	0	--	0	--	10	(3)
NIR/other	28	(14)	27	(29)	7	(29)	2	(33)	64	(20)
<b>Total Females</b>	<b>194</b>		<b>92</b>		<b>24</b>		<b>6</b>		<b>316</b>	

<sup>1</sup> Includes all persons who were first diagnosed with AIDS while residents of Iowa and who were  $\geq 13$  years of age at diagnosis. Exposures to HIV may have occurred at less than 13 years of age. Percentage totals may not equal 100 due to rounding of numbers. Percentages are not shown for small numbers.

## **Pediatric Exposures to HIV**

Pediatric (12 years of age or younger at time of diagnosis) AIDS cases have been reportable since February 1983. Pediatric cases of HIV infection were reportable beginning July 1, 1998. Because most pediatric AIDS cases and virtually all new HIV infections in children are perinatally acquired (mother to infant), births to HIV-infected women became reportable on July 1, 1998. Monitoring perinatal exposures allows the Iowa Department of Public Health to assess the efficacy of public health recommendations on the use of medications to decrease perinatal transmission of HIV. It also allows the department to assess any potential adverse consequences of these interventions to the infant.

In 1999, the Centers for Disease Control and Prevention issued a revised surveillance case definition for HIV infection. It included criteria for categorizing perinatally exposed infants as “exposed,” “uninfected,” or “infected” on the basis of virological tests conducted in the first 18 months of life.

To date, there have been reports of 95 births to HIV-positive residents of Iowa from January 1, 2007 to December 31, 2011 (Table 29, Figure 43). Data for 2011 are provisional pending matching of the state birth registry with the surveillance database to identify all known HIV-infected women who gave birth in 2011. Of the 95 births, 81 infants were uninfected, 3 were infected, and 11 remain undetermined (i.e. perinatally exposed). Those who remain undetermined may have been lost to follow up, usually because they have moved from the state with their parent(s) or guardian. Four more children born in this timeframe have been identified as having been born to an HIV-infected mother. Because their mothers were not Iowa residents at the time of delivery, these children have been excluded from the data presented below.

Studies indicate that appropriate prenatal treatment for the mother and prophylaxis for the infant result in less than two percent of infants becoming infected. Although only three (3%) Iowa infants became infected with HIV from their mothers, this is above what would be expected when appropriate and timely interventions for the mother are accessed.

**Table 29**  
**HIV Status of Child for Births to HIV-infected Female Residents of Iowa**  
**2006 through 2011<sup>1</sup>**

Year of Birth	# HIV Infected	# HIV Negative	# HIV Undetermined	Total HIV Exposures
2006	0	10	5	15
2007	0	7	4	11
2008	2	19	1	22
2009	0	16	1	17
2010	1	17	0	18
2011 <sup>1</sup>	0	12	0	12
<b>Totals</b>	<b>3</b>	<b>81</b>	<b>11</b>	<b>95</b>

<sup>1</sup> Data for 2011 are incomplete pending matching of the state birth registry with the surveillance database to identify all women in the surveillance database who gave birth in Iowa during 2011.

**Figure 43**  
**Births to HIV-infected Females in Iowa and HIV-infected Infants**  
**2000 through 2011**

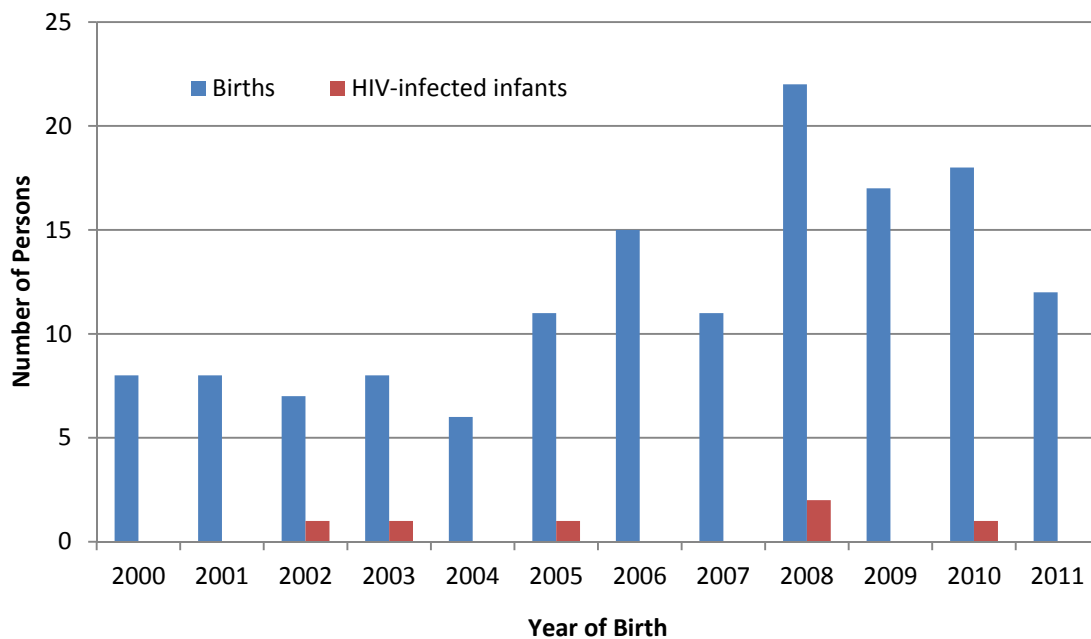


Table 30 shows all HIV diagnoses among persons with pediatric exposures to HIV since AIDS reporting began in 1983. During this period, 29 persons were diagnosed who were exposed to HIV while 12 years of age or younger. The most recent diagnosis was in 2010. Most (66%) of these infants had mothers who were HIV positive or were at high risk for HIV. Eight pediatric cases acquired HIV through treatments for hemophilia.

**Table 30**  
**Pediatric Exposures<sup>1</sup>**  
**Cumulative HIV and AIDS Cases Diagnosed through December 31, 2011**

<b>Exposure Category</b>	<b>All Cases</b>	
	<b>#</b>	<b>(%)</b>
Pediatric Hemophilia	8	(28)
Mother at risk for HIV	19	(66 )
is an IDU	5	
had sex with an IDU	5	
had sex with a bisexual man	1	
had sex with a hemophiliac	0	
had sex with a HIV-positive person whose risk is unknown	5	
has HIV, risk unknown	3	
Transfusion/ transplant	1	--
No identified risk (NIR)	1	--
<b>Totals</b>	<b>29</b>	

<sup>1</sup> Includes all persons first diagnosed with HIV while a resident of Iowa, regardless of current diagnosis (HIV or AIDS) and whose exposure occurred at < 13 years of age. Also includes persons who were first diagnosed with AIDS while residents of Iowa but for whom residence at time of HIV diagnosis was unknown.

***Summary of Exposure Data:***

- MSM remains the predominant risk category among persons diagnosed with HIV and the number of diagnoses among the MSM population has increased in recent years. In 2011, 67% of all males diagnosed with HIV reported having sex with other males.
- Diagnoses of HIV infection among persons who reported heterosexual contact have generally remained steady since 2006. In 2011, heterosexual contact was the second most common mode of exposure for all cases.
- Numbers of persons reported with no risks identified increased with the implementation of confidential HIV reporting by name in 1998. In 2011, 16% of all persons diagnosed did not have a risk identified. This makes interpretation of trends among exposure groups difficult, particularly for the most recent data. Reclassification of these cases over time may alter interpretations of the data.
- As a group, MSM account for just over half of all people living with HIV or AIDS (PLWHA) in Iowa as of December 31, 2011. Heterosexual contact was the mode of exposure for 19% of PLWHA, injection drug use was reported by 9%, and a combination of injection drug use and male-to male sex was reported by 7%. Exposure category was not known for 12%.

***Summary of Exposure Data, continued:***

- For persons diagnosed with HIV infection between January 1, 2007 and December 31, 2011, MSM is the highest mode of exposure for all racial and ethnic groups. However, the proportion is highest among white, non-Hispanic persons followed by Hispanic persons. The proportion of persons reporting heterosexual contact or with no identified risk is highest among black, non-Hispanic persons followed by Hispanic persons. Over half of all diagnoses in white, non-Hispanic persons were attributed to MSM exposure, but another 7% were MSM/IDU. Fifty-four percent of HIV diagnoses among Hispanics were MSM. Black, non-Hispanic persons and Hispanic persons are more likely to have unidentified risks than are white, non-Hispanic persons. Injection drug use alone accounted for only 7% of all diagnoses in the five-year period. Nearly all injecting drug users were white or black and non-Hispanic.
- Among women diagnosed with HIV between January 1, 2007 and December 31, 2011, heterosexual contact was the most common risk, accounting for 73% of all diagnoses. However, 35 % of black, non-Hispanic women had no risk identified. Injection drug use accounted for 9% of all diagnoses among females. Comparatively low numbers of diagnoses among females and high proportions of cases without an identified risk make interpretations of trends difficult.
- To date, there have been reports of 95 births to HIV-positive residents of Iowa from January 1, 2007 to December 31, 2011. Of the 95 births, 81 infants were uninfected, 3 were infected, and 11 remain undetermined (i.e. perinatally exposed). Although only three (3%) Iowa infants became infected with HIV from their mothers, this is above what would be expected when appropriate and timely interventions for the mother are accessed.

## Question 3

### Who is at the greatest risk of becoming infected with HIV and other STDs in Iowa?

This section provides a detailed look at high-risk populations using direct and indirect measures of high-risk behavior. Counseling and testing data, STD data, viral hepatitis data, and other survey data will be used to examine this question.

#### *Section Highlights*

Participants at publicly funded HIV counseling and testing sites reported high levels of unsafe behaviors. More than half of participants indicated they had sex after using drugs and nearly 10% had sex with an anonymous partner.

Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with nearly 11,000 cases reported in 2011. The incidence of chlamydia has nearly doubled since 2000 and reached an 11-year high in 2011.

The incidence of gonorrhea has increased by 42% since 2000. Gonorrhea shows the most disproportionate distribution among racial and ethnic groups of all sexually transmitted diseases. Black, non-Hispanic males have an incidence rate of reported cases of gonorrhea that is more than 82 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate 20 times that of white, non-Hispanic females. The rate among American Indian women is nearly double that of white, non-Hispanic women. Hispanic persons are more than 1.7 times more likely to be diagnosed with gonorrhea than white, non-Hispanic persons.

The incidence of syphilis remains low, with a total of 70 cases reported in 2011. However, this represents an increase of 2.5 times since 2005. Men who have sex with men (MSM) are disproportionately impacted by syphilis in Iowa. Additionally, black, non-Hispanic persons are disproportionately impacted by this infection also, with rates that were 22 times higher than white, non-Hispanic persons in 2011.

The male-to-female ratios for chlamydia and gonorrhea differ significantly between minority populations and the white, non-Hispanic population. White, non-Hispanic females with gonorrhea diagnoses outnumber white, non-Hispanic males by 3.8 to 1, while black, non-Hispanic males had diagnoses numbers approximately equal to black, non-Hispanic females. This may indicate that minority females are not being screened for asymptomatic infection at the same rate as other women in the state, or it may reflect other as yet undetermined reasons.

Extrapolating from national estimates, 1.3 to 1.9% of the state's population, or 39,602 to 57,880 Iowans, may be infected with hepatitis C. However, only 9,459 cases of hepatitis C have been identified and reported to IDPH from both public and private entities since 2002. During that time, approximately 8,000 tests were conducted at IDPH-supported test sites, with an average annual positivity of 10%.

## HIV AND AIDS BY OTHER INDICATORS

### Economic status of persons with HIV and AIDS

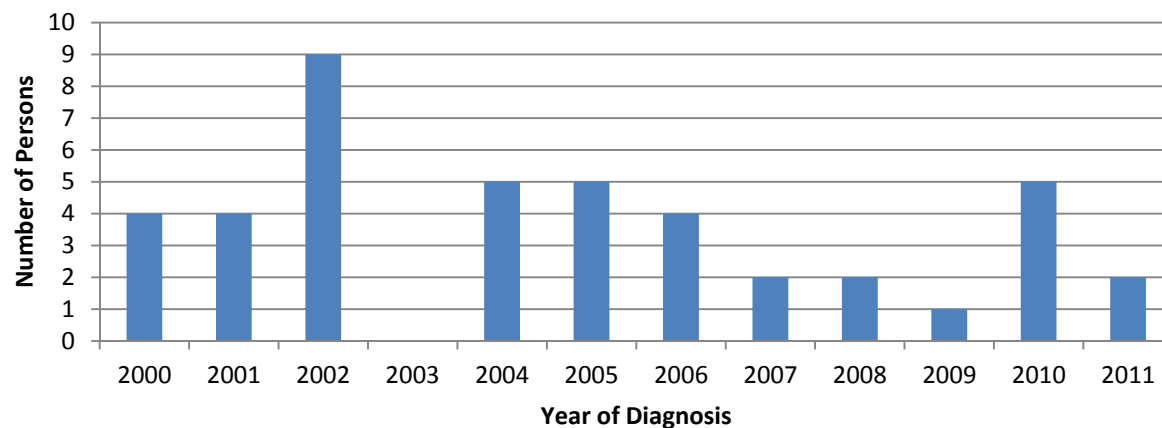
Although the economic status of persons diagnosed with HIV and AIDS is not reported on the confidential case-report form, the reimbursement source for medical treatment is collected. For all persons diagnosed with HIV in 2011, 12% reported no health insurance coverage, 14% reported public health insurance coverage for their medical care, 26% reported private insurance or other form of coverage, and the remaining 48% did not report a reimbursement source.

### Diagnoses of HIV in the Iowa Department of Corrections

A report published by the U.S. Department of Justice, National Institute of Justice, and the Centers for Disease Control and Prevention indicates that persons incarcerated in prisons and jails suffer disproportionately from infectious diseases, substance abuse, and socioeconomic problems. According to CDC, risk factors associated with HIV transmission such as injection drug use, commercial sex work, and lower socioeconomic status are higher among prison populations than non-prison populations. It is estimated that 1 in 7 persons living with HIV pass through a correctional facility in the U.S. where they may or may not have been initially diagnosed. (<http://www.cdc.gov/hiv/resources/factsheets/pdf/correctional.pdf>)

Upon admission to the Iowa Department of Corrections, each inmate is screened for tuberculosis, HIV, and other sexually transmitted diseases. Two newly admitted inmates were diagnosed with HIV infection in the Iowa Department of Corrections in 2011. These accounted for 1.7% of all new diagnoses in the state in 2011. From January 1, 2000, to December 31, 2011, 43 persons were first diagnosed with HIV in the state correctional system (Figure 44). As of December 31, 2011, 72 persons living with HIV infection had been initially diagnosed in a prison in Iowa representing 4% of all persons living with HIV/AIDS in Iowa.

**Figure 44**  
**HIV Diagnoses in the Iowa Department of Corrections<sup>1</sup>**  
**2000 through 2011**



<sup>1</sup>HIV diagnoses reflect all persons diagnosed with HIV for the first time, regardless of AIDS status, upon intake into the Iowa Department of Corrections.



## HIV/AIDS Risk Assessment and Behavioral Data

In 2011, the Iowa Department of Public Health funded 11 free, confidential HIV testing and counseling sites in Iowa, and held Memoranda of Agreement (MOA) with two sites which were provided with rapid test kits. Participants completed risk assessments as part of a testing visit or during outreach. In 2011, 5,842 HIV tests were conducted. Twenty-nine persons tested positive (0.5%). Because the counseling and testing system collects information only from persons who seek counseling and testing services, data are not representative of all persons who engage in high-risk behaviors.

There was a significant drop-off in testing from 2009 to 2010. This was because IDPH (due to funding cuts) decreased the number of MOA sites from eight to two. Additionally, testing sites faced an increased requirement to reach high-risk and/or disproportionately-impacted populations. This requirement decreased their number of “lower risk” tests. Although fewer positives were found, the positivity rate increased slightly (0.44% in 2009 to 0.50% in 2011). This may indicate improved efficiency in testing, in that there is a better understanding of how to reach populations at higher risk for HIV.

Table 31 presents the gender, race, and ethnicity of the participants. More males than females were tested. Black, non-Hispanic persons represented 33% of the participants, white, non-Hispanic persons made up 48% of the group, and Hispanic persons accounted for 15%. The proportion of Black and Hispanic individuals being tested has increased.

**Table 31**  
**HIV Counseling and Testing Participants by Gender, Race, and Ethnicity**  
**2011**

<b>Gender</b>	<b>#</b>	<b>(%)</b>	<b>Race and Ethnicity</b>	<b>#</b>	<b>(%)</b>
Male	3652	(63)	White, non-Hispanic	2,786	(48)
Female	2187	(37)	Black, non-Hispanic	1,923	(33)
Transgender	3	(.05)	Hispanic	848	(15)
<b>Total</b>	<b>5,842</b>		Am Indian/Alaskan	84	(1)
			Asian/Pacific Islander	78	(1)
			Other	123	(2)
			<b>Total</b>	<b>5,842</b>	

Participant ages are shown in Table 32. Forty-eight percent of the participants were 20 to 29 years of age. The overall average age of persons tested for HIV at IDPH-funded sites in 2011 was 30 years. The median age was 28 years. The average age of persons testing positive for HIV was 31 years.

A risk group was assigned to participants according to the behaviors they reported on their assessments. Table 32 shows that in 2011, 42% of the participants were considered General Population (GP), 28% indicated high-risk heterosexual contact (HRH) as their major risk, 14% were MSM, and 14% were injection drug users. As indicated in a previous section, please note that were the data from a directly funded CDC project targeting MSM to be included in this dataset, Iowa's MSM actually saw an increase in testing in 2011, making up 19% of all HIV testing at CTR sites. Since 2008, the proportion of persons being tested who are considered high-risk (HRH, MSM, IDU, and MSM/IDU) has increased as IDPH-funded test sites have focused testing outreach efforts on these populations.

**Table 32**  
**HIV Counseling and Testing Participants by Age Group and Risk**  
**2011**

<b>Age Range</b>	<b>#</b>	<b>(%)</b>	<b>Risk Group</b>	<b>#</b>	<b>(%)</b>
5-12	0	--	MSM/IDU	62	(1)
13-19	570	(10)	MSM	815	(14)
20-29	2,780	(48)	IDU	847	(14)
30-39	1,376	(24)	HRH	1,638	(28)
40-59	1,027	(18)	GP	2,480	(42)
60 and over	89	(2)	<b>Total</b>	<b>5,842</b>	
<b>Total</b>	<b>5,842</b>				

The risk behaviors of the participants and of their partners are shown in Table 33. In 2011, 53% of the participants had been tested previously, and 21% indicated that they had been infected with an STD in the past year. Less than 10% stated they had ever had sex with an anonymous partner, down from over 36% in 2009. Eleven (11) percent indicated they had ever had sex with someone they met on the Internet.

The proportions of persons who engage in these risk behaviors have been relatively consistent since 2009. However, the percentage of participants that said they had ever had sex with someone who exchanges sex for drugs, money, or something they need increased from 5% in 2009 to 9% in 2011. The proportion of participants who had sex with an anonymous partner decreased greatly, from 36% in 2009 to 9% in 2011.

**Table 33**  
**Reported Behaviors of HIV Counseling and Testing Participants**  
**2009 through 2011**

Participant Responses	2009		2010		2011	
	#	%	#	%	#	%
Indicated they had been tested before	4,320	53%	3,163	54%	3,098	53%
Had sex while using drugs within the last year	4,801	59%	3,439	59%	3,311	57%
Had a STD diagnosis within the last year	1,272	16%	1,121	19%	1,209	21%
Had ever had sex with someone who exchanges sex for drugs, money, or something they needed.	440	5%	431	7%	514	9%
Had ever had sex with someone who was HIV+	408	5%	358	6%	333	6%
Had ever had sex with someone who injected drugs	1,138	14%	881	15%	965	17%
Had ever had sex with an anonymous partner	2,913	36%	2,195	37%	538	9%
Had ever had sex with someone they met on the internet	651	8%	656	11%	655	11%
<b>TOTAL TESTS</b>	<b>8,160</b>		<b>5,859</b>		<b>5,842</b>	

#### Demographics of Clients Testing Positive in IDPH-Funded sites

Table 34 presents demographic trends of clients testing positive for HIV in IDPH-Funded sites from 2009-2011. The largest proportion of clients testing positive for HIV among IDPH counseling, testing, and referral sites (CTR) has remained consistently White, Non-Hispanic. This may be, in part, a result of the fact that those who are White and Non-Hispanic are also the largest number of clients tested and the predominant population in Iowa, as a whole. However, a large jump was seen in Hispanic clients testing positive for HIV, from less than 3% in 2009 to more than 20% in 2011. This may be due to an increased effort of IDPH-funded sites to reach Hispanic and Black clients, both of whom are considered disproportionately-impacted.

The epidemic, as it appears in those seeking and receiving HIV tests at IDPH-funded CTR sites, remains largely among men (69.4% in 2009; 89.7% in 2010; 79.3% in 2011) ages 20-39. In 2009, almost 70% of clients testing positive were either 20-29 or 30-39 years of age. In 2010 and 2011, the population of those testing positive were even higher for this age group: 72.4% of

clients were 20-39 years old in 2010, and 75.8% of positive clients in 2011 were in this age range.

**Table 34**  
**Demographic Characteristics of Clients Testing HIV-Positive at IDPH-Funded Sites**  
**2009 through 2011**

		<b>2009</b> (Total + tests=36)	<b>2010</b> (Total + tests=29)	<b>2011</b> (Total + tests=29)
<b>Race</b>	<b>White, non-Hispanic</b>	<b>22 (61.1%)</b>	<b>16 (55.2%)</b>	<b>16 (55.2%)</b>
	<b>Black, non-Hispanic</b>	<b>10 (27.8%)</b>	<b>9 (31.0%)</b>	<b>6 (20.7%)</b>
	<b>Hispanic</b>	<b>1 (2.8%)</b>	<b>1 (3.4%)</b>	<b>6 (20.7%)</b>
	<b>Asian</b>	<b>1 (2.8%)</b>	<b>2 (6.9%)</b>	<b>1 (3.4%)</b>
	<b>Native Hawaiian/Pacific Islander</b>	<b>1 (2.8%)</b>	<b>0</b>	<b>0</b>
	<b>Multiple Races</b>	<b>1 (2.8%)</b>	<b>1 (3.4%)</b>	<b>0</b>
<b>Age</b>	<b>13-19</b>	<b>2 (5.6%)</b>	<b>1 (3.4%)</b>	<b>1 (3.4%)</b>
	<b>20-29</b>	<b>13 (36.1%)</b>	<b>16 (55.2%)</b>	<b>15 (51.7%)</b>
	<b>30-39</b>	<b>12 (33.3%)</b>	<b>5 (17.2%)</b>	<b>7 (24.1%)</b>
	<b>40-49</b>	<b>7 (19.4%)</b>	<b>5 (17.2%)</b>	<b>4 (13.8%)</b>
	<b>50-59</b>	<b>1 (2.8%)</b>	<b>2 (6.9%)</b>	<b>0</b>
	<b>60+</b>	<b>1 (2.8%)</b>	<b>0</b>	<b>2 (6.9%)</b>
<b>Gender</b>	<b>Male</b>	<b>25 (69.4%)</b>	<b>26 (89.7%)</b>	<b>23 (79.3%)</b>
	<b>Female</b>	<b>11 (30.6%)</b>	<b>3 (10.3%)</b>	<b>6 (20.7%)</b>

#### Risk Behaviors of Clients Testing Positive for HIV in IDPH-Funded Clinics

Table 35 and Figure 45 illustrate trends in reported risk behaviors of clients testing positive for HIV in IDPH-Funded sites from 2009-2011. The epidemic, as it appears in clients seeking and receiving HIV tests at IDPH clinics and agencies, remains largely in the MSM community (men who have sex with men). Of the 36 clients who tested positive for HIV in 2009, 19 identified as MSM (52.7%). In 2010, of 29 HIV-positive clients, 19 identified as MSM (65.5%). In 2011, 14 of the 29 HIV-positive clients identified as MSM (48.3%). As indicated previously, if the 2011 dataset included MSM testing from the directly funded CDC project, this figure would adjust to 18 MSM of 33 HIV-positive clients (55%). Finally, the number of diagnoses from partners of those already sero-positive increased slightly from 2009 to 2011 (25.0% in 2009 to 41.4% in 2010 and 2011).

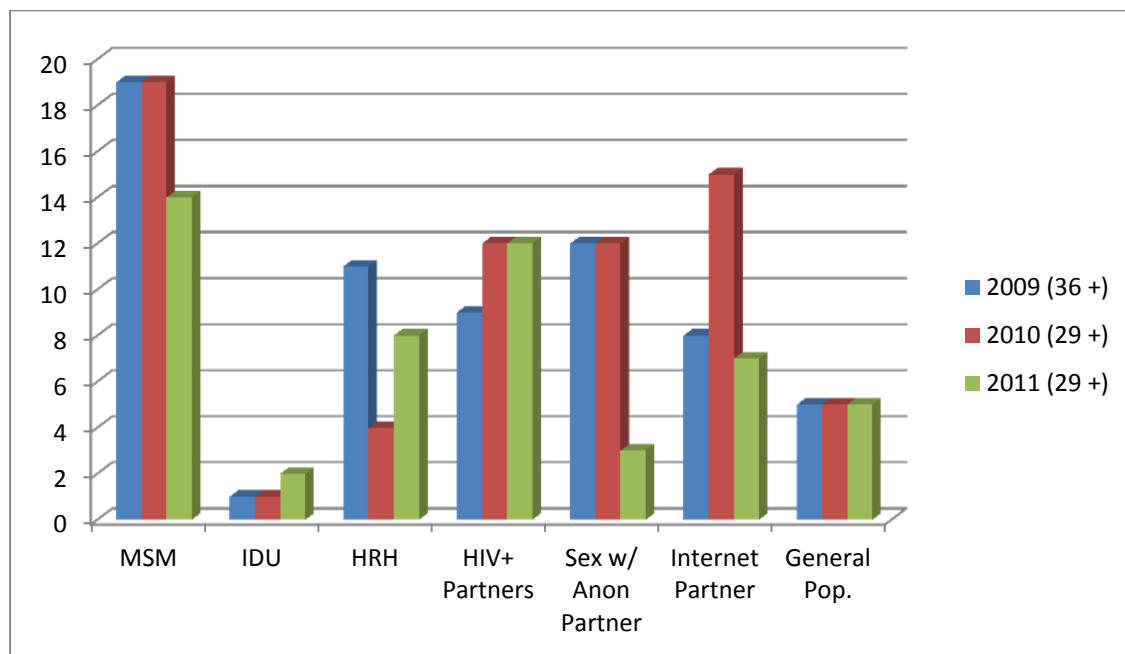
**Table 35**  
**Reported Risk Behaviors of Individuals Testing HIV Positive at IDPH-Funded CTR Sites**  
**2009 through 2011**

	Total	MSM	IDU	HRH	HIV+ Partners	Sex w/ Anon Partner	Sex w/ someone met on Internet	General Pop.*
<b>2009</b>	<b>36</b>	<b>19</b> (52.7%)	<b>1</b> (2.8%)	<b>11</b> (30.6%)	<b>9</b> (25.0%)	<b>12</b> (33.3%)	<b>8</b> (22.2%)	<b>5</b> (13.9%)
<b>2010</b>	<b>29</b>	<b>19</b> (65.5%)	<b>1</b> (3.4%)	<b>4</b> (13.8%)	<b>12</b> (41.4%)	<b>12</b> (41.4%)	<b>15</b> (51.7%)	<b>5</b> (17.2%)
<b>2011</b>	<b>29**</b>	<b>14**</b> (48.3%)	<b>2</b> (6.9%)	<b>8</b> (27.6%)	<b>12</b> (41.4%)	<b>3</b> (10.3%)	<b>7</b> (24.1%)	<b>5</b> (17.2%)

\*Includes Black/African American or Hispanic/Latino individuals

\*\*Were these data to include MSM data from the directly funded project, the Total number of new diagnoses would increase to 33; and the number of diagnoses among MSM would increase to 18 (54.5%).

**Figure 45**  
**Reported Risk Behaviors of Individuals Testing HIV+ at IDPH-Funded CTR Sites**  
**2009 through 2011\***



\*Excludes MSM data from directly funded projects.

## SEXUALLY TRANSMITTED DISEASES (STDs)

STDs are among the most frequently reported infectious diseases and constitute a significant health problem in Iowa. While STD rates suggest riskier sexual behavior, they do not necessarily correlate with HIV infection. However, the presence of non-ulcerative STDs, such as chlamydia and gonorrhea, increase the likelihood of HIV transmission.

The three bacterial STDs reportable to the Iowa Department of Public Health are chlamydia, gonorrhea, and syphilis. In considering STD data, one should be aware of certain limitations. The quality of STD data is dependent upon which provider or facility is reporting. All cases reported to the STD Prevention Program in 2011 are presented here, including cases for which race, age, or county of residence is unknown. Race was not reported for a large number of cases. In addition, the reported incidence of STDs may reflect the demographics of individuals seeking care at a particular facility or may reflect the practices of certain providers (e.g., only cases with laboratory confirmation of disease are reported) and may not necessarily be representative of the characteristics of all infected individuals.

Women are generally reported with STDs more frequently than men. Because of the nature of the specimen collection procedure and of screening criteria for publicly funded screening programs, women are often tested for STDs as a routine part of a pelvic exam, while men are generally tested only if they have symptoms or are a partner of someone who tested positive. This often results in a higher number of cases diagnosed and reported among females, particularly for those diseases where men are likely to be asymptomatic (e.g., chlamydia and gonorrhea).

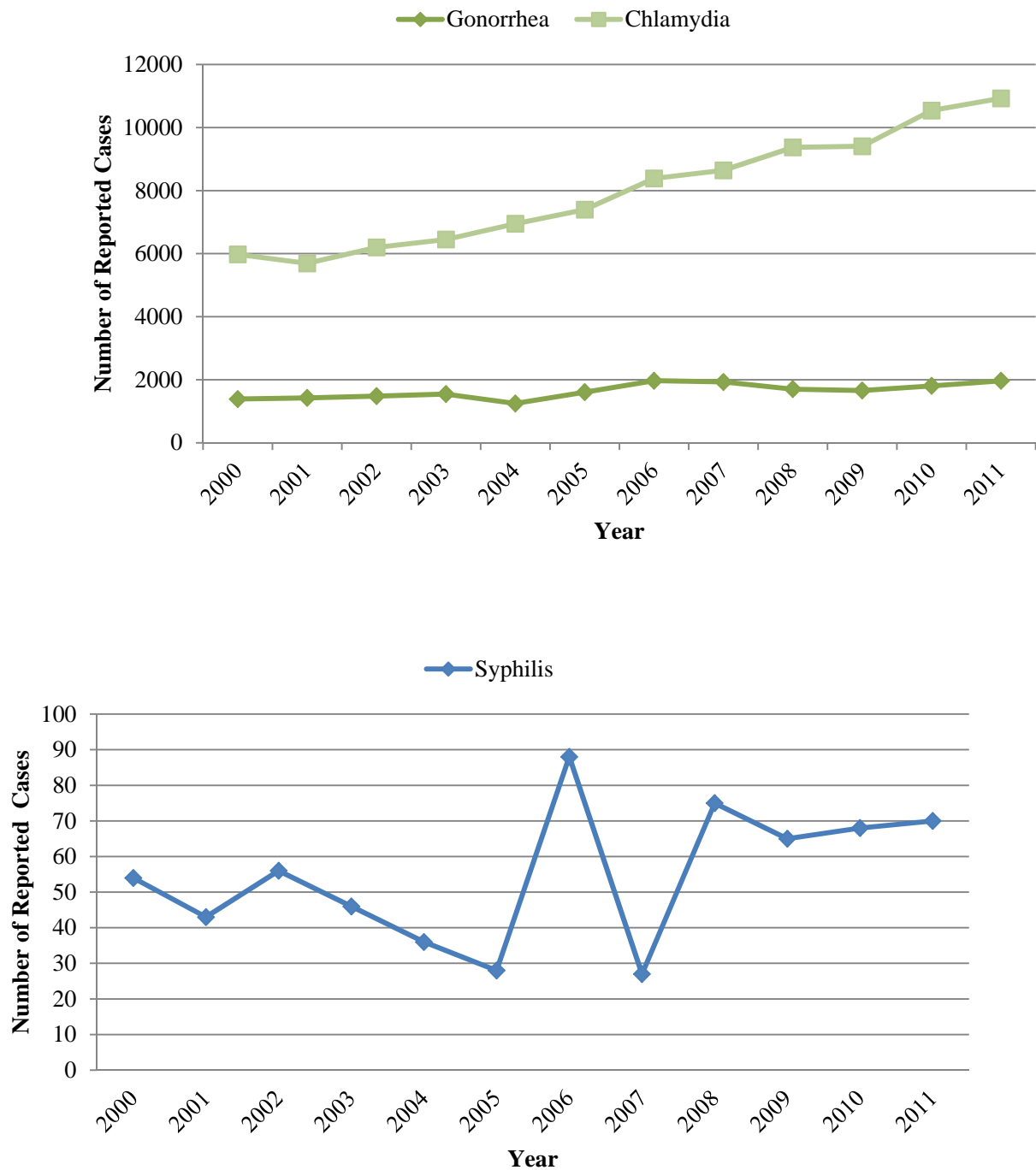
Iowa is part of the Region VII Infertility Prevention Project. Federally funded screening has been done in Iowa since 1994. The main purpose of the National Infertility Prevention Project is to implement prevention strategies, including screening, that will reduce the complications caused by *Chlamydia trachomatis*. From the beginning, women have been targeted by the project. The complications associated with women are more costly, women access services more readily, and by screening women, partners can be treated. Approximately 80% of those tested as part of the Project in Iowa are female. Testing for chlamydia is offered to all sexually active women who are 25 years of age or younger. Women over age 25 can receive the test if they have certain risk factors such as new or multiple partners in the last 90 days, contact with an infected partner, or clinical signs or symptoms of disease.

There are currently 68 clinics enrolled in the Iowa Infertility Prevention Project (IIPP). Most are family planning clinics, but STD clinics, student health centers, correctional facilities, community health centers, a tribal clinic, and non-Title X women's health centers are also included. The IIPP reported 2,666 persons with chlamydia in 2011, which is 24% of all reported cases of chlamydia in Iowa.

New cases of three reportable sexually transmitted diseases in Iowa are shown in Figure 46. Chlamydia is the most frequently reported sexually transmitted disease in Iowa, with 10,928 cases reported in 2011. This is the highest number of cases ever reported and comes after 15

years of steady increases. Incidence of gonorrhea has been gradually increasing since 2009. The incidence of syphilis remains low in Iowa with occasional outbreaks in localized areas.

**Figure 46**  
**Reported Cases of Bacterial STDs in Iowa**  
**2000 through 2011**



In 1998, the state chlamydia and gonorrhea testing programs, in conjunction with the State Hygienic Laboratory at the University of Iowa, began testing with improved amplified DNA probes, which increased the sensitivity of both of these tests and allowed for more cases to be detected. Improved versions of these tests, utilizing nucleic acid amplification, were implemented in 2003 and 2006. While the increased sensitivities of these tests may have increased the number of infections diagnosed in each of those years, trends over many years probably are not greatly affected.

## Chlamydia

In the United States, urogenital infections of *Chlamydia trachomatis* occur very frequently among sexually active adolescents and young adults. CDC estimates that 2.8 million people are newly infected annually in the U.S. Asymptomatic infection is common among both men and women. Sexually active adolescents and young adults should be routinely screened for chlamydia during annual examinations, even if symptoms are not present. In women, untreated chlamydia can result in pelvic inflammatory disease, which can cause infertility, ectopic pregnancy, and chronic pelvic pain.

Chlamydia remains the most reported bacterial sexually transmitted disease in the United States and in Iowa. In 2011, there were 10,928 cases (363 cases per 100,000 population) reported to the STD Prevention Program (Figure 47). Females account for the majority of chlamydia cases, accounting for approximately 72 percent of all cases.

**Figure 47**  
**Reported Cases of Chlamydia by Gender**  
**2000 through 2011**

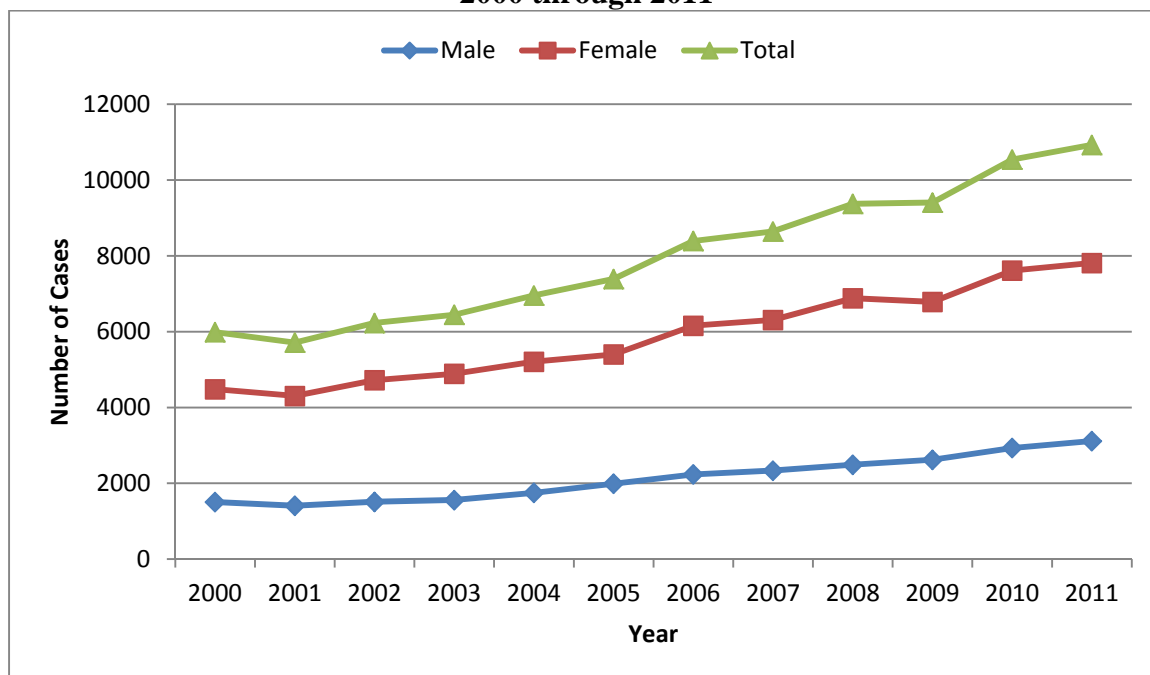
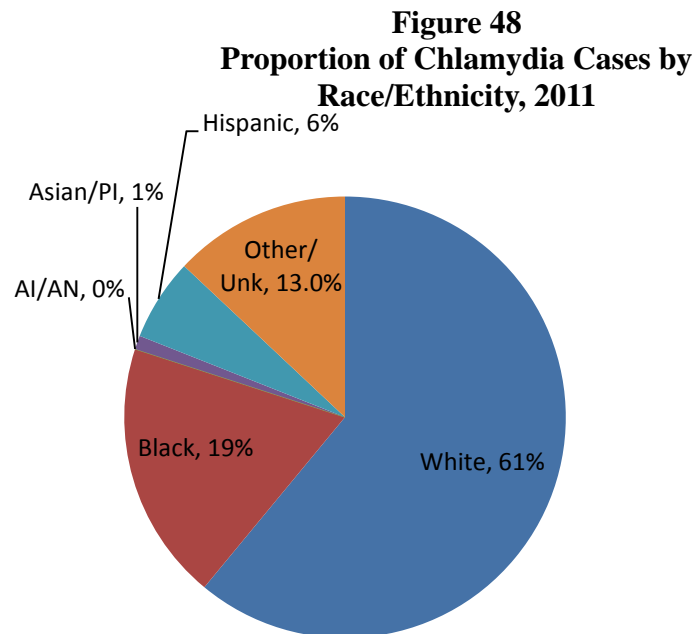




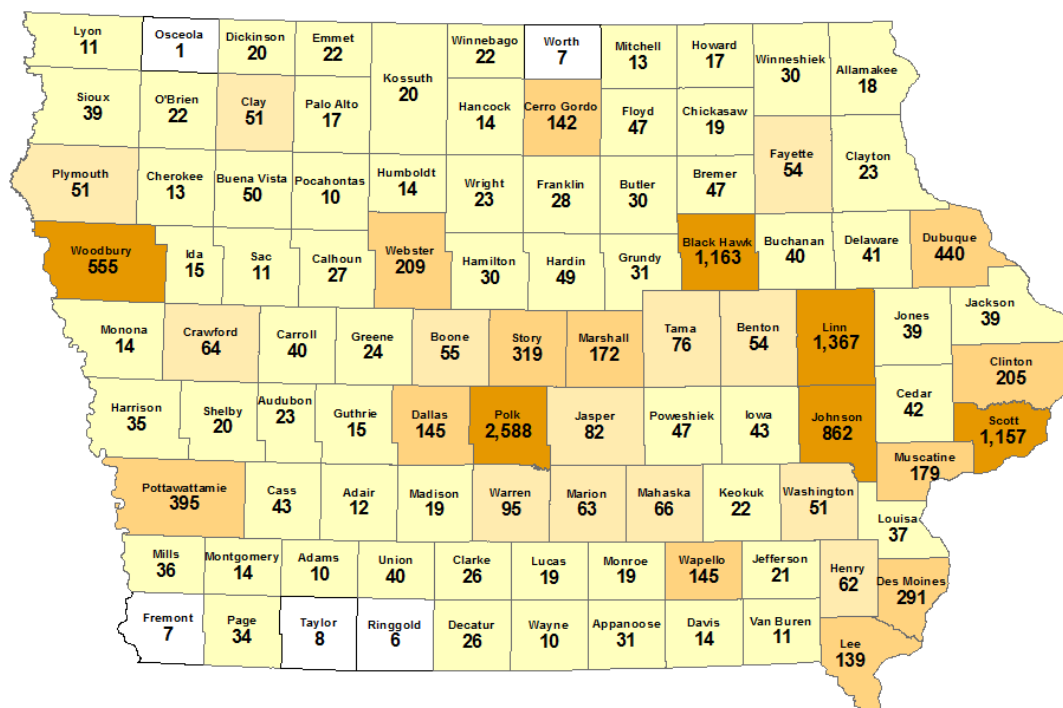
Figure 48 shows the number of reported cases of chlamydia by race/ethnicity for 2011. By far, the largest proportion of cases is among white, non-Hispanic persons, and the trends seen in the overall incidence of reported chlamydia cases are due, in large part, to females within this group.

Females of all three racial and ethnic groups have higher reported morbidity than males. Despite the relatively low population of black, non-Hispanic persons in Iowa (approximately 3% of the state's population), this group comprises a large proportion of chlamydia. According to 2010 data from CDC, Iowa's black, non-Hispanic population has the highest rate of chlamydia when compared to black, non-Hispanic populations in every other state or territory in the U.S.



The geographical distribution of reportable STDs (chlamydia, gonorrhea, and syphilis) in 2011 are shown in Figure 49. Because chlamydia is the most commonly reported infection, the distribution of STD cases is most affected by chlamydia. Sixty-five percent of the cases were reported in the eight most populous counties of Black Hawk, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, and Woodbury. These counties contain approximately 45% of Iowa's population.

**Figure 49**  
**2011 Reported STD Cases by County of Residence**



Incidence of chlamydia by county, for those counties that reported at least 25 cases, is shown in Table 36. Counties are ranked according to the highest rate per 100,000 population. Seven of the top ten counties are among the ten most populous counties.

The increase in reported cases of chlamydia in 2011 was not experienced by all counties. Linn, Johnson, Dubuque, and Woodbury counties accounted for the largest increases in absolute numbers of cases. The greatest increase since 2008 was seen in Linn County, whose number of chlamydia cases increased by nearly 60% since the preceding three years.

**Table 36**  
**Incidence of Chlamydia by County**

<b>County</b>	<b># of cases</b>	<b>Rate per 100,000</b>
Black Hawk	896	693
Johnson	750	572
Scott	936	562
Des Moines	227	553
Linn	1,097	524
Woodbury	510	496
Polk	2,053	478
Webster	183	477
Tama	72	414
Marshall	157	400
Crawford	63	384
Wapello	135	382
Audubon	23	381
Dubuque	346	372
Lee	131	370
Muscatine	158	368
Clinton	173	354
Pottawattamie	318	352
Story	293	336
Union	39	319
Cass	41	298
Clay	49	295
Louisa	33	293
Henry	58	291
Mahaska	64	291
Cerro Gordo	126	289
Decatur	23	279
Floyd	43	270
Iowa	42	266
Clarke	24	264
Greene	24	259
Fayette	52	258
Hardin	44	257
Adams	10	254
Monroe	19	252
Franklin	26	247
Appanoose	31	244
Buena Vista	46	235
Poweshiek	43	233
Delaware	40	232
Grundy	28	230

Table 37 shows the number of reported cases of chlamydia by age, race, ethnicity, and gender. Seventy-two percent of all cases were female. Older adolescents and young adults (age groups 15 to 19 years and 20 to 24 years) shared the burden of disease, with 75 percent of all female cases and 59 percent of all male cases occurring in these two age groups. Males, on average,

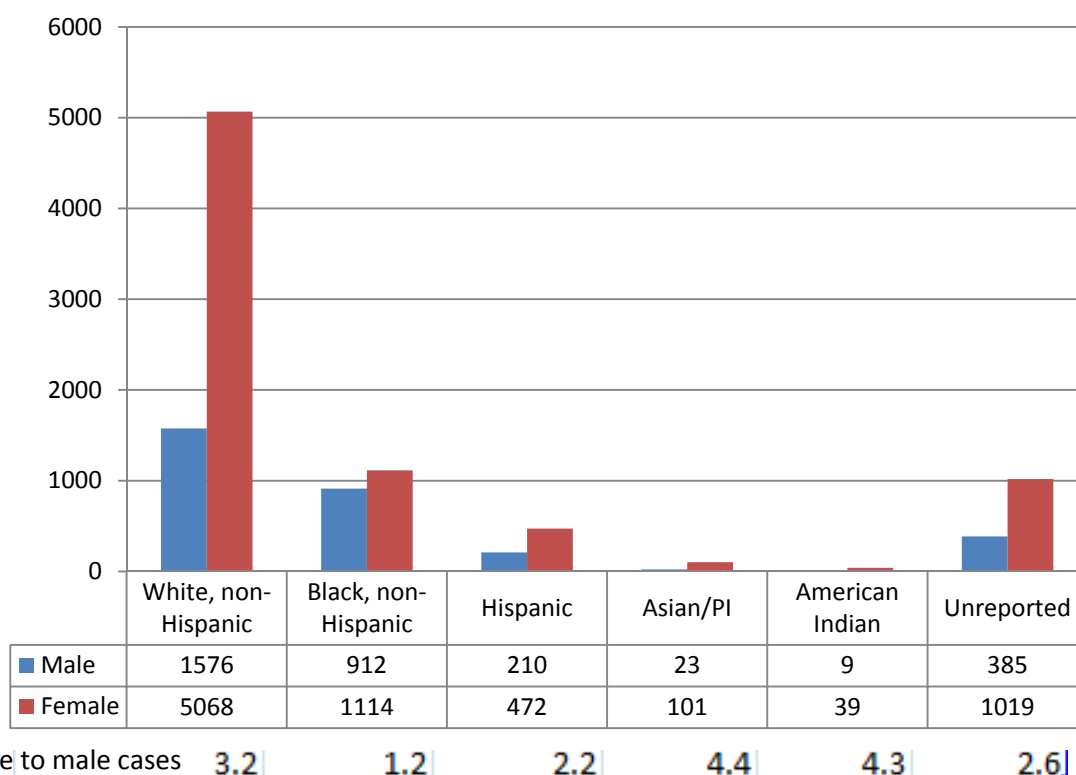
tended to be older than females. The majority of cases (61%) occurred among white, non-Hispanic persons. Black, non-Hispanic persons accounted for 19 percent of the cases even though they make up only 2.9% of Iowa's population. Hispanic persons accounted for 6 percent of the cases. Thirteen percent of cases did not have a race or ethnicity reported.

**Table 37**  
**Reported Cases of Chlamydia by Age, Race, Ethnicity, and Gender**  
 2011 IOWA CHLAMYDIA

Age Group	Asian/PI		Black		Hispanic		American Native		White		*NR Race		Total Male		Total Female	
	M	F	M	F	M	F	M	F	M	F	M	F	M	Rate	F	Rate
0 - 4			2	1		1			3	4	1		6	6	6	6
5 - 9				1									0	0	1	1
10 - 14		2	1	21		3				21	1	10	2	2	57	61
15 - 19	2	32	193	408	36	119	3	13	245	1,439	76	347	555	501	2,358	2,213
20 - 24	8	29	354	456	86	192	6	14	678	2,398	154	421	1,286	1,105	3,510	3,164
25 - 29	5	20	182	148	44	74		10	384	761	70	140	685	682	1,153	1,211
30 - 34	4	10	98	57	30	54		2	159	287	42	50	333	381	460	548
35 - 39	4	2	52	13	10	18			48	88	25	30	139	153	151	172
40 - 44		3	15	6	2	8			32	43	12	6	61	64	66	71
45 - 54		2	11	3		3			19	21	3	10	33	15	39	18
55 - 64			4		2				6	6		5	12	7	11	6
65+		1							2		1		3	2	1	0
UNK													0		0	
<b>Total</b>	<b>23</b>	<b>101</b>	<b>912</b>	<b>1,114</b>	<b>210</b>	<b>472</b>	<b>9</b>	<b>39</b>	<b>1,576</b>	<b>5,068</b>	<b>385</b>	<b>1,019</b>	<b>3,115</b>		<b>7,813</b>	
<b>Rate<sup>3</sup></b>	<b>90</b>	<b>371</b>	<b>1,953</b>	<b>2,540</b>	<b>291</b>	<b>758</b>	<b>163</b>	<b>683</b>	<b>118</b>	<b>366</b>				<b>210</b>		<b>513</b>

Figure 50 illustrates the ratio of male-to-female cases. Females outnumbered males for all races and ethnicities, but the ratio of males to females varied for the different racial and ethnic groups. Among white, non-Hispanic persons, more than three females are reported with chlamydia for every male. American Indian and Asian/Pacific-Islander females had more than four times as many cases of chlamydia than males within their respective racial groups. Among Hispanic persons, however, females outnumbered males by only 2.2 to 1. Even more striking, the number of black, non-Hispanic females was very close to the number of black, non-Hispanic males, with a ratio of 1.2 to 1.

**Figure 50**  
**Diagnoses of Chlamydia by Race, Ethnicity, and Gender**  
**2011**



The disproportionate distribution of chlamydia among minority groups is illustrated in Table 38. Asian/Pacific Islander is the only minority group that is not disproportionately affected by chlamydia. When standardized for population size, black, non-Hispanic males have an incidence rate of reported cases of chlamydia that is more than 16 times that of white, non-Hispanic males. Black, non-Hispanic females have a rate that is nearly seven times that for white, non-Hispanic females. The rate among American Indian, non-Hispanic persons is nearly 1.8 times that of white, non-Hispanic persons and the rate among Hispanics is more than two times that of white, non-Hispanic persons.

**Table 38**  
**Incidence Rates<sup>1</sup> for Chlamydia by Race, Ethnicity, and Gender**  
**Iowa, 2011**

<b>Race and Ethnicity</b>	<b>Males</b> (# / 100,000 males)	<b>Females</b> (# / 100,000 females)	<b>Total</b> (# / 100,000 pop.)
White, non-Hispanic	118	366	244
Black, non-Hispanic	1,953	2,540	2,238
American Indian, non-Hispanic	163	683	427
Asian/PI, non-Hispanic	23	101	235
Hispanic	291	758	507
<b>All Cases</b>	<b>210</b>	<b>513</b>	<b>363</b>

<sup>1</sup>Based upon 2010 population estimates by race and ethnicity from the U.S. Census Bureau

## Gonorrhea

In the United States, CDC estimates that there are 700,000 new infections of *Neisseria gonorrhoeae* each year. Most infections among men produce symptoms that cause them to seek curative treatment soon enough to prevent serious sequelae (i.e., conditions resulting from the disease), but this may not be soon enough to prevent transmission to others. Many infections among women do not produce recognizable symptoms until complications (e.g., pelvic inflammatory disease (PID)) have occurred. Both symptomatic and asymptomatic cases of PID can result in tubal scarring that leads to infertility or ectopic pregnancy. Because gonococcal infections among women often are asymptomatic, an important component of gonorrhea control in the United States and Iowa continues to be the screening of women at high risk for STDs.

The number of reported cases of gonorrhea in Iowa increased sharply from 2004 to 2006, and decreased between 2006 and 2009 in both males and females (Figure 51). Since 2009, gonorrhea cases have been gradually increasing. Diagnoses among females increased most significantly, particularly in 2006. In contrast to chlamydia, females only slightly outnumber males reported with gonorrhea.

In 2011, there were 1,966 reported cases of gonorrhea (65 cases per 100,000 population), up from 1,658 reported cases (55 cases per 100,000 population) in 2008. Case numbers have slowly increased since 2009.

**Figure 51**  
**Diagnoses of Gonorrhea by Gender, 2000 through 2011**

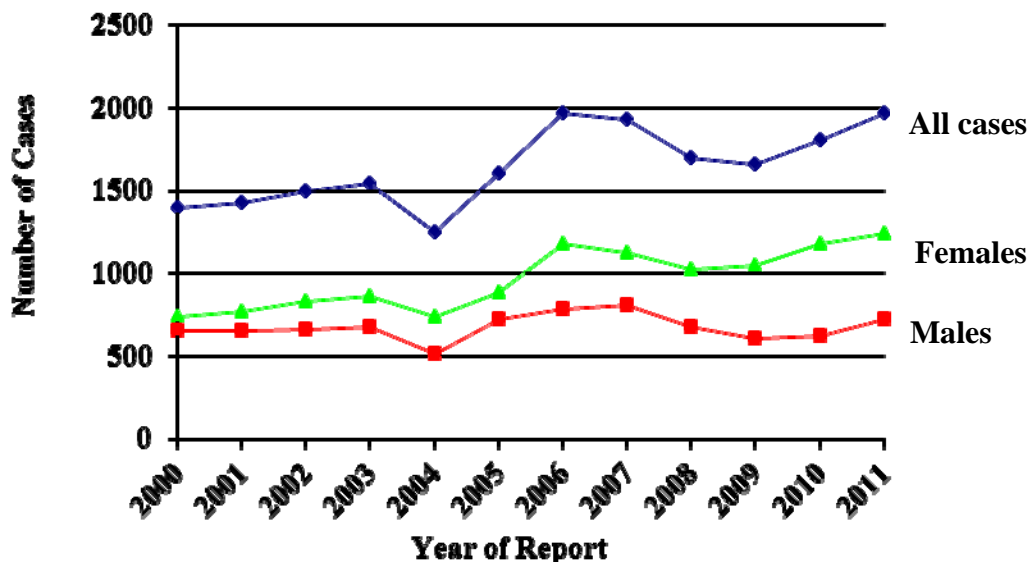
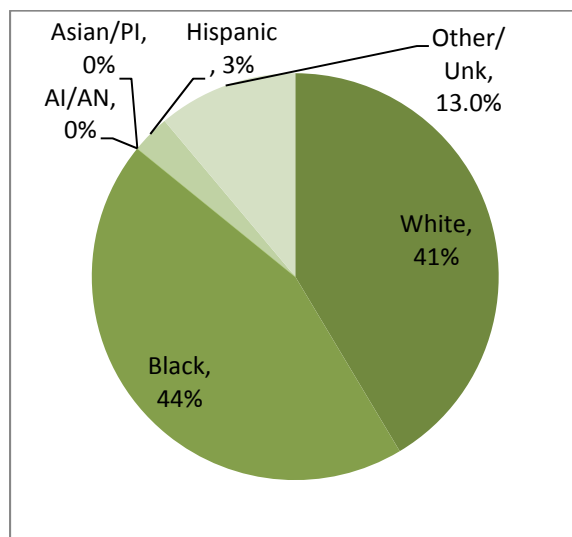


Figure 52 shows the incidence of gonorrhea by race/ethnicity for 2011. Black, non-Hispanic persons account for the largest proportions of reported cases. Black males have consistently outnumbered black females. This is the reverse of what is generally expected and of what is seen with chlamydia.

**Figure 52**  
**Diagnoses of Gonorrhea by Race/Ethnicity**  
**2011**



As is the case for HIV and chlamydia, the eight most populous counties contributed a disproportionate number of cases. Almost 80 percent of gonorrhea cases were reported from these eight counties. These counties contain just 45 percent of Iowa's total population.

Incidence rates by county, for those counties with at least five reported cases, are shown in Table 39. Counties are ranked according to the highest rate per 100,000 population. Incidence in the eight most populous counties is almost two times higher than in the other counties. The largest increases in absolute numbers of cases were seen in Black Hawk, Dubuque, Linn, Johnson, and Pottawattamie.

**Table 39**  
**Incidence of Gonorrhea by County**  
**2011**

<b>County</b>	<b>Total</b>	<b>Pop</b>	<b>Rate *</b>
Black Hawk	265	129,276	205
Des Moines	63	41,058	153
Scott	215	166,650	129
Linn	261	209,226	125
Polk	513	429,439	119
Dubuque	94	93,072	101
Pottawattamie	77	90,224	85
Johnson	106	131,005	81
Calhoun	7	9,671	72
Webster	26	38,346	68
Clinton	30	48,934	61
Muscatine	20	42,934	47
Washington	9	21,258	42
Woodbury	41	102,831	40
Marshall	15	39,259	38
Cerro Gordo	16	43,609	37
Warren	15	45,275	33
Buchanan	7	20,910	33
Mills	5	15,002	33
Story	25	87,214	29
Dallas	18	61,950	29
Benton	7	26,734	26
Wapello	9	35,334	25
Lee	8	35,447	23
Bremer	5	23,460	21
Jasper	6	36,257	17



Table 40 shows the incidence of gonorrhea by age, race, ethnicity, and gender. Sixty-three percent of all cases were female. Older adolescents and young adults (ages 15 to 29 years) shared the burden of disease, with over 65 percent of all female cases and over 56 percent of all male cases occurring among persons of these ages. Males, on average, tended to be older than females. Black, non-Hispanic persons, though only 2.9% of the population, had the largest burden of disease among all racial groups, with 44 percent of the cases. White, non-Hispanic persons accounted for 41 percent of cases and Hispanic persons accounted for three percent. Race and ethnicity were not identified for 11 percent of the cases.

**Table 40**  
**Reported Cases of Gonorrhea by Age, Race, Ethnicity, and Gender**

## 2011 IOWA GONORRHEA

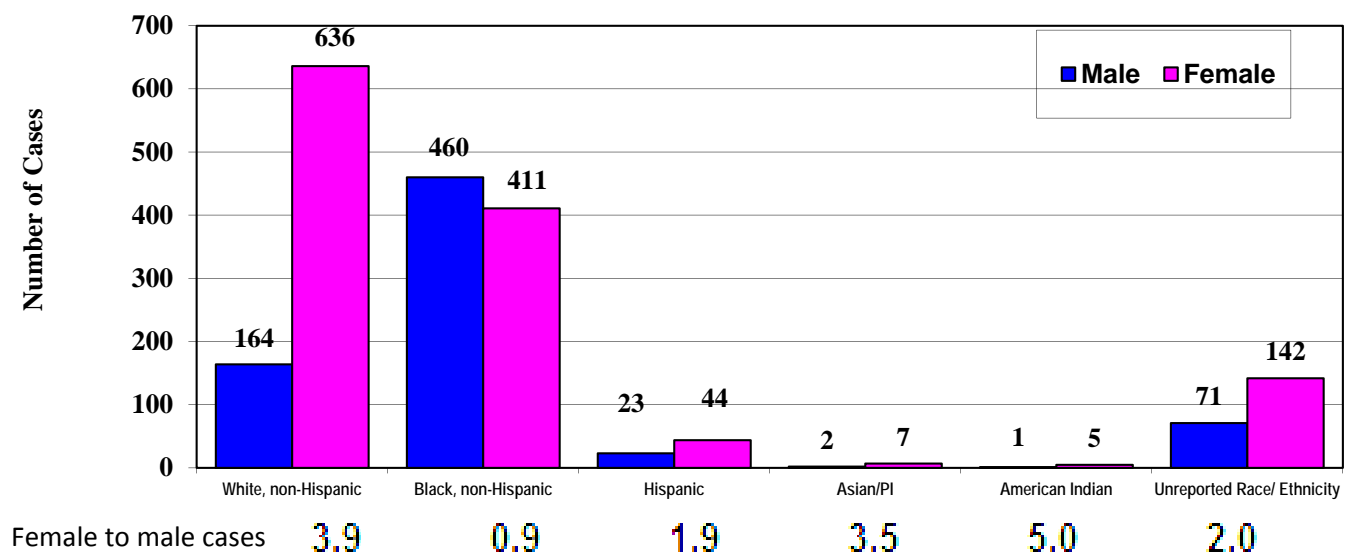
Age Group	Asian/PI		Black		Hispanic		American Native		White		*NR Race		Total Male		Total Female	
	M	F	M	F	M	F	M	F	M	F	M	F	M	Rate	F	Rate
0 - 4													0	0	0	0
5 - 9												1	0	0	1	1
10 - 14			1	8						1		4	1	1	13	14
15 - 19		3	100	140	3	16			26	137	13	41	142	128	337	316
20 - 24	1	4	164	153	15	17	1	3	58	252	25	47	264	227	476	429
25 - 29	1		93	61	5	5		2	28	134	15	31	142	141	233	245
30 - 34			52	33		3			21	51	8	8	81	93	95	113
35 - 39			27	11		3			5	33	4	6	36	40	53	60
40 - 44			9	3					12	16	4	3	25	26	22	24
45 - 54			9	2					12	10	2	1	23	10	13	6
55 - 64			5						2	2			7	4	2	1
65+													0	0	0	0
UNK													0		0	
Total	2	7	460	411	23	44	1	5	164	636	71	142	721		1,245	
Rate <sup>3</sup>	8	26	985	937	32	71	18	88	12	46				49		82

Figure 54 illustrates the ratio of male-to-female cases by race and ethnicity. There is a marked difference in the relative numbers of males and females between the white, non-Hispanic group and the black, non-Hispanic group. Among white, non-Hispanic persons, females outnumbered males four to one. Black, non-Hispanic and Hispanic males were almost equally affected by gonorrhea compared to females. Male-to-female ratios are not only different between racial and ethnic groups, but the ratios are very different from the male-to-female ratios seen for chlamydia.

A number of different factors may contribute to differences in male-to-female ratios between racial groups and diseases. For example, minority females may have less access to routine screening than do white, non-Hispanic females. In that case, asymptomatic infections may not be diagnosed among minority females. Because gonorrhea is more often symptomatic than is chlamydia, particularly among males, more males may seek care for gonorrhea than for chlamydia. Together, these factors may explain some of the differences described here.

It is also not known whether there are differences in the prevalence of chlamydia and gonorrhea in certain risk groups, such as men who have sex with men. This could potentially cause differences in male-to-female ratios as well. Risk information data were not collected from persons reported with STDs in 2011. If the diseases differ in how prevalent they are among men who have sex with men, or if the diseases affect MSM of one racial or ethnic group more than other groups, the male-to-female ratio may increase for that disease or group.

**Figure 54**  
**Diagnoses of Gonorrhea by Race, Ethnicity, and Gender**  
**2011**



The disproportionate distribution of gonorrhea among minority groups is illustrated in Table 41. When standardized for the population size, black, non-Hispanic males have an incidence rate of reported cases of gonorrhea that is more than 82 times that of white, non-Hispanic males. Black, non-Hispanic females are also disproportionately represented, with a rate more than 20 times that of white, non-Hispanic females. The rate among American Indian women is 1.9 times that of white, non-Hispanic women. Hispanic persons are more than 1.7 times more likely to be diagnosed with gonorrhea than white, non-Hispanic persons.

**Table 41**  
**Incidence Rates<sup>1</sup> for Gonorrhea by Race, Ethnicity, and Gender**  
**Iowa, 2011**

<b>Race and Ethnicity</b>	<b>Males</b> (# / 100,000 males)	<b>Females</b> (# / 100,000 females)	<b>Total</b> (# / 100,000 pop.)
White, non-Hispanic	12	46	29
Black, non-Hispanic	985	937	962
American Indian, non-Hispanic	18	88	53
Asian/PI, non-Hispanic	8	26	17
Hispanic	32	71	50
<b>All Cases</b>	<b>49</b>	<b>82</b>	<b>65</b>

<sup>1</sup>Based upon 2010 Population Projections by Race and Ethnicity from the U.S. Census Bureau

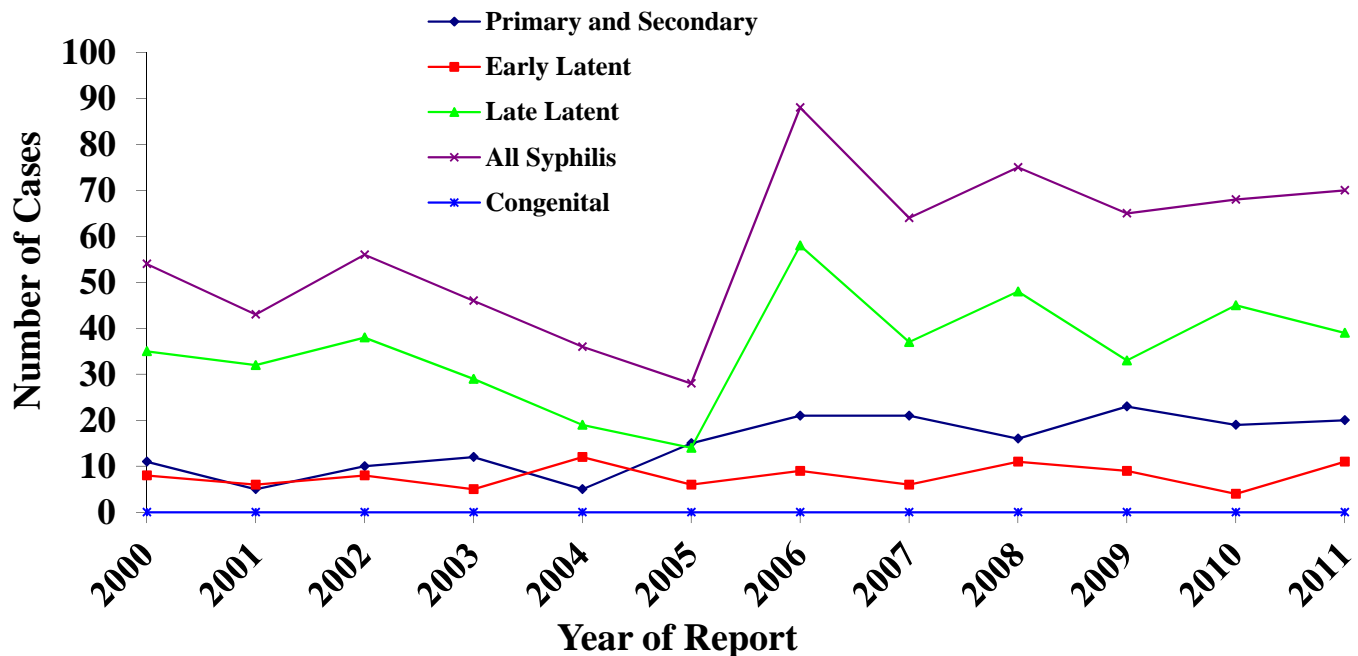
## Syphilis

Syphilis is a systemic disease caused by the bacteria *Treponema pallidum*. People with syphilis may seek treatment for signs or symptoms of primary infection (e.g., ulcer or chancre at the infection site), secondary infection (e.g., manifestations that include rash, mucocutaneous lesions, condyloma latum, and adenopathy), or tertiary infection (e.g., cardiac, neurologic, ophthalmic, auditory, or gummatous lesions). Neurosyphilis occurs when there is evidence of central nervous system infection with *T. pallidum*; this can occur in any stage, especially in persons infected with HIV. Infections also may be detected by serological testing during the latent stage. Latent syphilis is a term used to describe the period after infection when patients are seroreactive but demonstrate no other evidence of disease. Latent syphilis acquired within the preceding year is referred to as *early latent syphilis*; all other cases of latent syphilis are *late latent syphilis*. The term *early syphilis* refers to the sum of primary, secondary, and early latent syphilis.

Cases of syphilis reported to the Iowa Department of Public Health are prioritized for follow up by a Disease Prevention Specialist. One of the more important reasons for syphilis case follow-up is the prevention of congenital syphilis, which arises as a result of transmission from a pregnant woman to her unborn fetus. Congenital syphilis can manifest as stillbirth or as a full range of severe medical problems that can last an entire lifetime. Other reasons for case reporting include the prevention of tertiary syphilis or neurosyphilis and, of course, the prevention of spread to others.

In 2011, there were 20 primary and secondary, 11 early latent, 39 “late,” and no congenital cases of syphilis reported to the STD Prevention Program. Total syphilis morbidity in Iowa remains substantially lower than national averages. Increases in total cases in 2000, 2002, and 2006 were the result of increases in diagnoses of late latent syphilis (Figure 55). These cases were the not the result of recent exposures and they highlight the difficulties in eliminating a disease that can be asymptomatic for long periods of time.

**Figure 55**  
**Diagnoses of Syphilis**  
**2000 through 2011**



Among the 31 total early syphilis cases (i.e., recent infections) reported in 2011, thirteen were 20 to 29 years of age, eleven were 30 to 39 years, and three were 40 years of age or more.

Syphilis, like other sexually transmitted diseases, reflects an over-representation of minority populations. In 2011, seven total early syphilis cases (23%) were reported among black, non-Hispanic persons, twenty (63%) were among white, non-Hispanic persons, and three (10%) were among Hispanic persons.

Syphilis is the only STD in Iowa for which a greater number of men are affected than women. In 2011, 23 (74%) of reported cases were among males. Furthermore, MSM are disproportionately affected by syphilis in Iowa, a trend that is also observed for HIV infections. More than 58 percent of individuals diagnosed with early syphilis reported as MSM.

## **Viral Hepatitis**

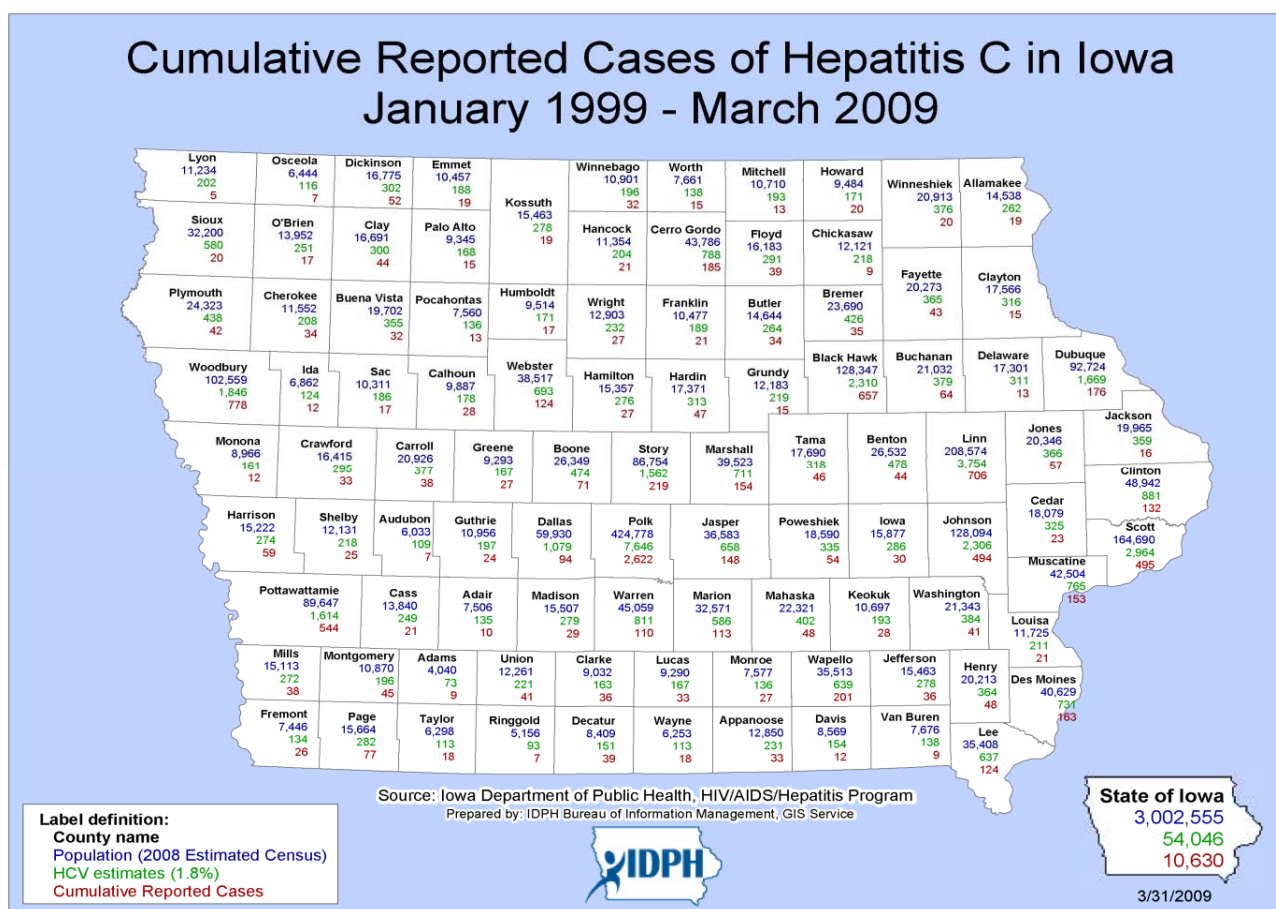
### Estimated Burden and Costs of Disease

Viral hepatitis describes those infections that can cause inflammation of the liver, are infectious, and are caused by viruses. Common symptoms of viral hepatitis include jaundice, abdominal pain, fatigue, loss of appetite and nausea. All cases of viral hepatitis are potentially communicable, and can have devastating effects on the lives of those infected. Cases of viral hepatitis, most commonly hepatitis A, B, or C, are reported to the Iowa Department of Public Health (IDPH) as mandated by the Iowa Code section 139A.3 and the Iowa Administrative Code 641, Chapter 1.

The financial burden caused by viral hepatitis nationally is anticipated to be devastating, as the Centers for Disease Control and Prevention (CDC) estimates of present and future costs of hepatitis C range between \$600 million to \$14.1 billion in direct costs, \$21.3 billion in disability, and \$54.2 billion due to premature mortality (Wong, 2004). These costs do not include loss in wages, leave from employment, medical costs, and overall health and quality of life deterioration suffered by persons infected with viral hepatitis.

There were an estimated 4.1 million cases of hepatitis C in the United States, and up to 85 percent of these cases are chronic. According to the 2010 U.S. Census Bureau population estimate for Iowa, there were 3,046,355 people residing in the state. By generalizing national estimates, it can be projected that approximately 1.3 to 1.9% of the state's population, or 39,602 to 57,880 Iowans, are infected with the hepatitis C virus. Since 2002, 9,459 cases of hepatitis C have been identified and reported to IDPH from both public and private entities. During that time, approximately 8,000 tests were conducted at IDPH-supported test sites, with an average annual positivity of 10%. Figure 56 shows the geographic distribution of Hepatitis C cases in Iowa, by county.

**Figure 56**  
**Geographic Distribution of Hepatitis C Cases in Iowa**  
**1999 through 2009**



## Vaccination and Testing Program

Before state funding was secured for HCV testing, counseling, and referral, funds from the HIV prevention cooperative agreement and from the Immunization Program's Section 317 Grant Program were used to establish HCV counseling and testing with hepatitis A and B immunizations at eight test sites in the state.

In 2006, state legislation establishing the viral hepatitis program was passed and the Bureau of HIV, STD, and Hepatitis was awarded funding from the state legislature to establish viral hepatitis prevention strategies in the department. The funding allows the program to distribute information to people at risk for hepatitis C, to provide hepatitis C testing, and to make hepatitis A and B immunizations available for adults at risk. In addition, from 2006 to 2009, the department received state general funding to promote hepatitis testing and immunizations among veterans in the state. A campaign called *Knowledge is Freedom* was developed and marketed to veterans and veteran service organizations across the state.

In 2009, the bureau issued a Request for Proposals (RFP) to expand viral hepatitis services. The purpose of the RFP was:

- To increase the number of local health departments and community-based organizations that provided integrated HIV and viral hepatitis services; and
- To provide HIV and viral hepatitis services to specific, hard-to-reach populations through outreach, social network strategies, and other innovative approaches that reach high-risk individuals where they gather.

As a result of the RFP, 10 local public health departments and community-based organizations now offer integrated hepatitis services across the state. Hepatitis immunization services are available in eight of the ten most populous counties, and hepatitis C testing is available in seven of the ten most populous counties. Approximately 5% of clients tested are Hispanic or Latino and 7% are black and non-Hispanic. In Iowa, 5% of the population is Hispanic, and less than 3% is black.

Integrated service providers are required to demonstrate that at least 90 percent of all persons tested are individuals at high risk for acquiring HCV, as defined by the following criteria:

- Persons who have ever injected drugs;
- Injection drug users who share needles or other equipment;
- Persons who received blood, blood products, or organ transplants prior to 1992; or
- Persons ever on long-term hemodialysis.

Immunizations for hepatitis A and B are provided to adults who:

- Were diagnosed with a sexually transmitted disease in the past 90 days,
- Identify as men who have sex with men,
- Are injection and non-injection drug users,
- Are HIV- and/or hepatitis C-infected persons, or
- Are sexual partners of persons infected with HIV, hepatitis A (HAV), and/or hepatitis B (HBV).

CTR providers conduct outreach to local substance abuse centers, jails, community health centers, and other venues to reach high-risk individuals. Over the years, the contractors have built strong relationships with local partners to reach populations at risk. Demographic, risk, and service provider data are collected through Luther's EvaluationWeb, a Web-based data collection system. The State Hygienic Laboratory (SHL) automatically uploads HCV-antibody test results (i.e., EIAs) into EvaluationWeb.

The department only conducts HCV-antibody testing at its sites, using a signal-to-cutoff ratio to identify probable cases. Providers are required to deliver results to persons who test positive and to refer the client to specialist. The department does not conduct RNA testing, as SHL does not have this capability.

In 2011, 63 (12%) of the 537 persons tested were found to be positive for hepatitis C infection (Table 42). In 2010, 102 (10%) of the 1,003 persons tested were found to be positive for hepatitis C infection (Table 43).

**Table 42**  
**Hepatitis C Tests at State-funded Testing Sites**  
**2011**

<b>Counseling, Testing, and Referral Site</b>	<b>Number Tested</b>	<b>Number Positive</b>	<b>Percent Positive</b>
Black Hawk County Health Department	97	8	8%
Cerro Gordo County Health Department	51	1	1%
Council Bluffs City Health Department	13	4	31%
Hillcrest Family Services	6	0	0%
Johnson County Public Health	27	4	15%
Linn County Health Department	66	7	11%
Polk County Health Department	140	25	18%
Siouxland Community Health Center	51	5	10%
Siouxland District Health Department	37	6	16%
Webster County Public Health	49	3	6%
<b>Grand Total</b>	<b>537</b>	<b>63</b>	<b>12%</b>



**Table 43**  
**Hepatitis C Tests at State-funded Testing Sites**  
**2010**

<b>Counseling, Testing, and Referral Site</b>	<b>Number Tested</b>	<b>Number Positive</b>	<b>Percent Positive</b>
Black Hawk County Health Department	141	15	11%
Cerro Gordo County Health Department	106	3	3%
Council Bluffs City Health Department	17	3	18%
Hillcrest Family Services	6	1	17%
Johnson County Public Health	77	11	14%
Linn County Health Department	40	5	13%
Polk County Health Department	97	11	11%
Siouxland Community Health Center	53	11	21%
Siouxland District Health Department	53	7	13%
Webster County Public Health	31	4	13%
<b>Grand Total</b>	<b>621</b>	<b>61</b>	<b>11%</b>



*Section*

**2**

**RYAN WHITE CARE ACT  
SPECIAL QUESTIONS AND  
CONSIDERATIONS**

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**Question 1: What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?**

**Question 2: What are the patterns of utilization of HIV services by persons living with HIV in Iowa?**

**Question 3: What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?**

This section describes the characteristics of persons living with HIV in Iowa who receive Ryan White services, their patterns of use of HIV primary medical care and support services, and a description of who is not receiving HIV primary medical care. The information presented includes a description of the Ryan White Program and its services; a breakdown of program participants by age, gender, race and ethnicity, income, housing status, and medical insurance provider; and a summary of the utilization of Ryan White Part B and Part C services. The information may be used by prevention and care planning groups to identify gaps in services or to help target services to specific populations of HIV-positive persons.

### ***Section Highlights***

- Iowa receives Ryan White Part B and Part C funds for the delivery of essential services to individuals and families with HIV disease. In 2011, 12 providers served 1,610 people with Part B services (not including ADAP), including medical and non-medical case management, mental health, emergency financial assistance, transportation services, and other support services. Medical case management was the most utilized Part B-funded service.
- The AIDS Drug Assistance Program (ADAP) enrolled 744 persons living with HIV/AIDS in 2011. Of these, 689 utilized the program with 514 utilizing the medication assistance and 259 persons utilizing the insurance assistance in.
- Three community health centers and one university-based health clinic receive Part C funds in Iowa. In 2011, Part C providers assisted 1,371 people with outpatient HIV primary medical care. Iowans living with HIV also received services at the University of Nebraska Medical Center in Omaha, NE, the Mayo Clinic in Rochester, MN, and some insured Iowans living with HIV chose to receive their HIV care from a private practice physician. Beyond assistance with primary medical care, case management, treatment adherence counseling, and oral health were the services most utilized.
- In general, persons utilizing Part B, Part C, and ADAP services were similar in demographics to persons living with HIV, as presented earlier in this profile.
- Of the 2,326 people reported to be diagnosed with HIV/AIDS as of September 30, 2010, and living in Iowa as of December 31, 2010, 749 (or 32%) had no evidence of HIV primary medical care in 2011. Persons *out of care* were more likely to have HIV (non-AIDS), be members of a racial minority, have been born outside the U.S., reside in rural counties, or have lived longer since having been diagnosed with HIV.

## **RYAN WHITE HIV/AIDS TREATMENT EXTENTION ACT SERVICES**

In 1990, Congress enacted the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act to provide emergency assistance to localities that are disproportionately affected by HIV and to make financial assistance available to states and other public or private nonprofit entities. The funds are for the development, organization, coordination, and operation of more effective and cost-efficient systems for the delivery of essential health and support services to individuals and families with HIV disease. Funding for the Ryan White CARE Act is administered by the Health Resources and Services Administration (HRSA) through cooperative agreements with states and other agencies.

Congress reauthorized the CARE Act in 1996, 2000, 2006, and 2009 to support funding for Part A through D, Special Projects of National Significance (SPNS), HIV/AIDS Education Training Centers, and the Dental Reimbursement Program. Iowa receives funding for Part B, Part C, and an AIDS Education Training Center.

### **Part B Program**

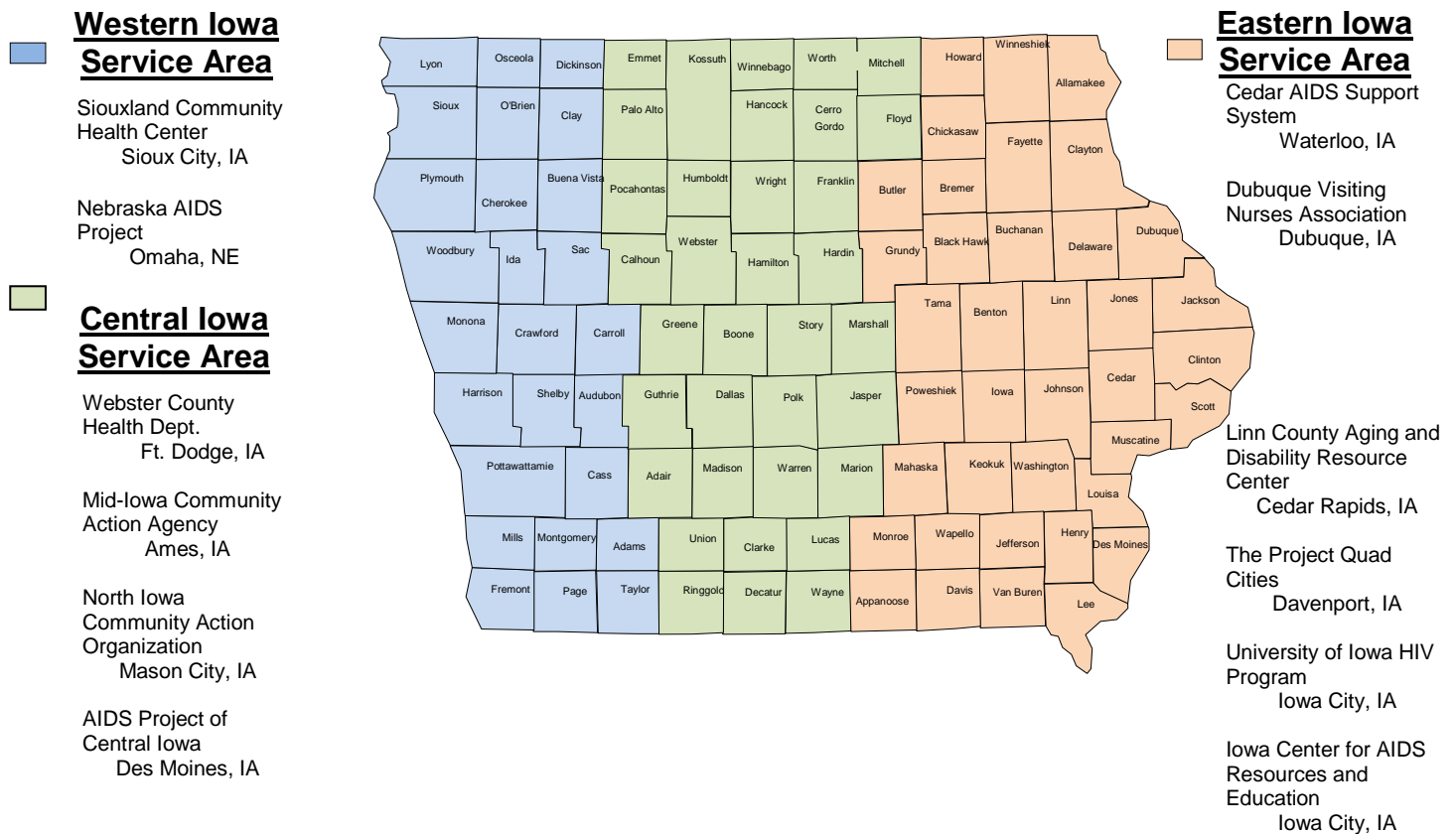
Part B funding is provided by HRSA to improve the quality, availability, and organization of health care and support services for low-income individuals and families with, or affected by, HIV disease. Funding is also available for low-income individuals to provide access to pharmaceuticals through AIDS Drug Assistance Programs (ADAP).

The Part B program, which includes ADAP, serves as the payer of last resort for persons living with HIV (PLWH) who are uninsured or who have inadequate insurance and cannot cover the costs of care on their own. In other words, clients must be ineligible for all other resources, including Medicaid, before being enrolled. ADAP also assists individuals who are low income and have adequate insurance coverage, but cannot cover the costs of their premiums, medication copayments, and deductibles. In 2011, 1,110 Iowans received support services through the Ryan White Part B program, and 744 persons were enrolled in the AIDS Drug Assistance Program. Approximately 514 persons received medication assistance and another 259 persons received insurance assistance.

Iowa has 12 service providers that serve all counties of the state (Figure 57). For the purposes of this report the state has been divided into three regions: Western, Central, and Eastern. The providers in each region provide essential health and support services, such as case management, mental health services, emergency financial assistance, transportation services, and referrals to eligible clients living with HIV.

Figure 57

## 2011 Ryan White Service Areas

**AIDS Drug Assistance Program**

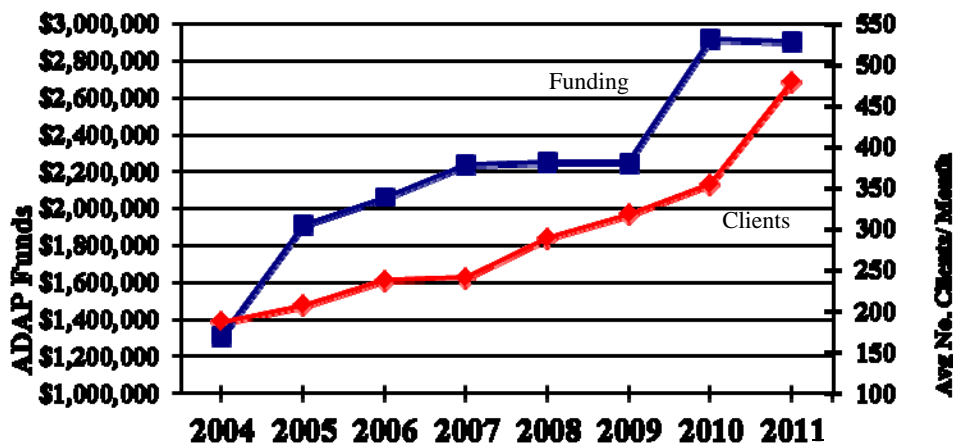
Iowa's ADAP provides medication assistance (HIV-related prescription drugs) to uninsured and underinsured persons living with HIV/AIDS. Iowa's ADAP provides insurance assistance to insured persons living with HIV/AIDS who are unable to pay for their premiums, medication copayments, and deductibles. To qualify for assistance, individuals must make less than 200% of the Federal Poverty Level.

The ADAP is administered by IDPH and uses a centralized pharmacy that distributes drugs to clients statewide. The Ryan White ADAP Advisory Committee provides periodic review of ADAP, including the ADAP formulary. Seventy medications are provided to low-income individuals with HIV. The categories of drugs include nucleoside analogues, non-nucleoside reverse transcriptase inhibitors, nucleotide reverse transcriptase inhibitors, protease inhibitors, fusion inhibitors, PCP prophylaxis medications, antidepressant/anxiety medications, antipsychotic/hypnotic medications, antifungals, anti-mycobacterials, general antivirals, and an anti-neoplastic medication.

In 2011, 744 individuals were enrolled in the ADAP, with an average of 479 individuals receiving either medication assistance or insurance assistance per month. Figure 58 presents the average number of clients receiving medications each year from 2004 to 2011 and the total

amount of funding ADAP received those years. Since 2004, monthly utilization has grown 158%, from an average of 186 to 479 individuals per month.

**Figure 58**  
**Total Federal Funding and Average Number of Clients per Month Receiving**  
**Medications from the AIDS Drug Assistance Program / Whole Program<sup>1</sup>**  
**2004 through 2011**



<sup>1</sup>Whole Program for ADAP includes both medication assistance and insurance assistance. Patients could not be unduplicated. i.e. Clients who may have received medication assistance and then later received insurance assistance may be counted twice.

### Part C Early Intervention Services Programs

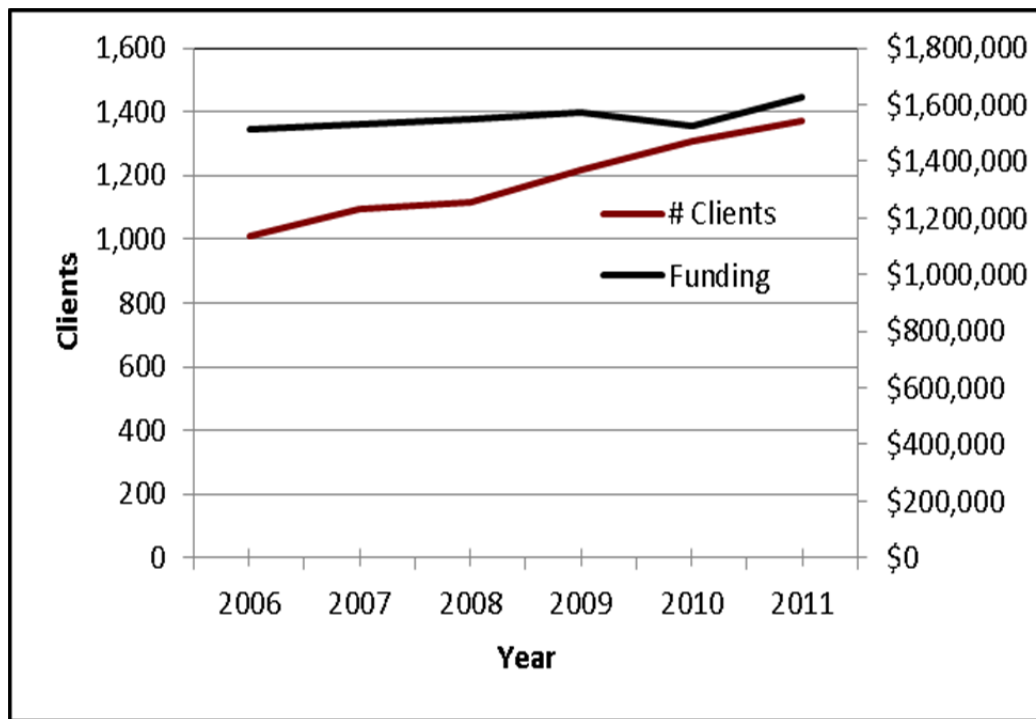
Ryan White Part C funds are provided directly to clinics to support primary medical care and other services for low-income people living with HIV disease. There are five Part C clinics that are accessible to low-income, HIV-positive Iowans. Three of these are community health centers located in Davenport, Des Moines, and Sioux City, Iowa. The other two clinics are the University of Iowa Hospitals and Clinics in Iowa City, Iowa, and the University of Nebraska Medical Center (UNMC) in Omaha, Nebraska. Data from the University of Nebraska Medical Center in Nebraska were not available for this profile.

Part C services include:

- Medical evaluation, clinical care, antibody testing, and risk-reduction counseling;
- Antiretroviral therapies; protection against opportunistic infections; and ongoing medical, oral, nutritional, psychosocial, and other care services for HIV-infected clients;
- Case management to ensure access to services and continuity of care for HIV-infected clients; and
- Attention to other health problems that occur frequently with HIV infection, including tuberculosis and substance abuse.

Iowa Part C clinics reported all Part C-eligible clients who utilized services, not just those clients whose services were paid with Part C funds. Client-level data were not available, so there may be duplication of clients among the clinics, given that clients occasionally change clinics or move within the state. Additionally, these data include many non-residents. In particular, the community health center in Davenport, Iowa, serves many Illinois residents and the center in Sioux City serves Nebraska and South Dakota residents. It should be noted, though, that many Iowans residing in the southwest quadrant of the state receive their care from the Part C clinic at the University of Nebraska Medical Center in Omaha, NE, and that their data are not represented here. In 2011, the four clinics located in Iowa received a total of approximately \$1.6 million and served a total of 1,371 persons. For many years, Ryan White funding has remained level while the numbers of clients has increased (Figure 60). The graph below demonstrates how funding has not kept up with need among the Part C clinics in Iowa.

**Figure 60**  
**Ryan White Part C Funding in Iowa**



## Question 1

**What are the characteristics of persons living with HIV/AIDS who receive HIV services in Iowa?**

### CHARACTERISTICS OF PART B SUPPORT SERVICE CLIENTS

#### Primary Demographic Characteristics

Table 44 shows the primary demographic characteristics of Part B support service clients by region in 2011. The Eastern region served 444 clients, the Central region served 492 clients, and the Western region served 174 clients. The Eastern region provided 40% of all Part B support service clients, the Central region provided 44% of Part B support service clients, and the Western region served the remaining 16% of clients.

Demographically, clients served are very similar to the demographic breakdown of persons living with HIV/AIDS as presented earlier in this profile.

There are some notable differences in clients served between the regions. The largest proportions of black, non-Hispanic clients were served by the Central and Eastern regions, where respectively 23% and 24% of the clients were black, non-Hispanic persons, compared to 20% of persons living with HIV/AIDS in the state. The Western region had the highest proportion of Hispanic clients at 12% compared to 9% of persons living with HIV/AIDS in the state. The Central region also had the fewest percentage of HIV/AIDS clients that were White, non-Hispanic at 61% compared to 67% of persons living with HIV/AIDS in the state.

There were not large differences in the sex distributions or the age distributions of the clients between the regions. However, it should be noted that representative of the aging HIV population, the percentage of clients 45 to 64 years of age has been steadily increasing from 2005 to 2011 from 36% of clients in 2005 to 47% in 2011.

**Table 44**  
**Primary Demographic Characteristics of Part B CARE Act Clients<sup>1</sup> by Region**  
**2011**

	Region							
	Western		Central		Eastern		Total	
<b>Race/ Ethnicity</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
White, non-Hispanic	118	(68)	300	(61)	287	(65)	705	(64)
Black, non-Hispanic	23	(13)	114	(23)	108	(24)	245	(22)
Hispanic	21	(12)	44	(9)	30	(7)	95	(9)
Asian	3	(2)	14	(3)	12	(3)	29	(3)
Nat. Hawaiian/ Pac. Isl	0	--	1	--	0	--	1	--
Am. Indian/ Alaska Nat.	3	(2)	0	--	2	--	5	--
More than one race	6	(3)	18	(4)	4	(1)	28	(2)
Unknown race	0	--	1	--	1	--	2	--
<b>Sex</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
Male	134	(77)	373	(76)	335	(76)	842	(76)
Female	40	(23)	116	(23)	107	(24)	263	(24)
Transgender	0	--	3	(1)	2	--	5	--
Unknown/not reported	0	--	0	--	0	--	0	--
<b>Current Age (yrs)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
<2	0	--	0	--	1	--	1	--
2-12	2	(1)	1	--	0	--	3	--
13-24	5	(3)	22	(4)	21	(5)	48	(4)
25-44	79	(45)	231	(47)	200	(45)	510	(46)
45-64	83	(48)	225	(46)	212	(48)	520	(47)
65 and older	5	(3)	13	(3)	10	(2)	28	(3)
Unknown/not reported	0	--	0	--	0	--	0	--
<b>Totals</b>	<b>174</b>		<b>492</b>		<b>444</b>		<b>1110</b>	

<sup>1</sup> Counts could not be unduplicated. Clients who received services in more than one region will be counted more than once. All clients that utilized a service eligible for Part B funding are included.

### Economic Indicators for Part B Support Service Clients

Table 45 shows indicators for living arrangement, income, and medical insurance for clients who were served by Part B support service providers in 2011.

Nine percent of clients were living in non-permanent housing in 2011. The Western region had the highest proportion of clients living in non-permanent housing (11%) while the Eastern and Central regions both had 8% of their clients living in non-permanent housing.

Fifty-one percent of all clients served had an income equal to or less than the federal poverty level (FPL) in 2011. The Central region has the highest proportion of clients (53%) who had incomes that were at or below the federal poverty level.



**Table 45**  
**Economic Indicators for Part B CARE Act Clients<sup>1</sup> by Region**  
**2011**

<b>Region</b>	<b>Western</b>		<b>Central</b>		<b>Eastern</b>		<b>Total</b>	
<b>Living Arrangement</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
Permanent Housing	152	(87)	443	(90)	404	(91)	999	(90)
Non-permanent Housing	20	(11)	40	(8)	35	(8)	95	(9)
Institution	1	(1)	2	(1)	1	--	4	--
Other	1	(1)	1	--	0	--	2	--
Unknown	0	--	6	(1)	4	(1)	10	(1)
<b>Income</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
Equal to or below FPL <sup>2</sup>	87	(50)	260	(53)	220	(50)	567	(51)
101-200% FPL	60	(34)	161	(33)	146	(33)	367	(33)
201-300% FPL	22	(13)	47	(10)	58	(13)	127	(11)
Greater than 300% FPL	5	(3)	17	(3)	10	(2)	32	(3)
Unknown/not reported	0	--	7	(1)	10	(2)	17	(2)
<b>Medical Insurance</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
Private	35	(20)	98	(20)	98	(22)	231	(21)
Medicare	36	(21)	62	(13)	89	(20)	187	(17)
Medicaid	21	(12)	102	(21)	193	(44)	316	(29)
Other Public Provider	0	--	11	(2)	5	(1)	16	(1)
No Public or Private Insurance	79	(45)	204	(41)	55	(12)	338	(30)
Other	3	(2)	9	(2)	1	--	13	(1)
Unknown/not reported	0	--	6	(1)	3	(1)	9	(1)
<b>Totals</b>	<b>174</b>		<b>492</b>		<b>444</b>		<b>1110</b>	

<sup>1</sup> Counts could not be unduplicated. Clients who received services in more than one region will be counted more than once. All clients that utilized a service eligible for Part B funding are included (not just clients that met Part B guidelines for eligibility).

<sup>2</sup> FPL = Federal Poverty Level

Statewide, 78% of clients did not have medical insurance, utilized other public insurance providers, or utilized Medicaid or Medicare to pay for medical services in 2011. Utilization of Medicaid varied greatly between the regions with the Eastern region having the highest proportion of clients at 44%, the Central region at 21%, and the Western at 12%. Discrepancies in Medicare utilization were also noted with the Central region at only 13%, while the Western and Eastern regions were at 21% and 20% respectively.

## CHARACTERISTICS OF AIDS DRUG ASSISTANCE PROGRAM CLIENTS

### Primary Demographic Characteristics

Table 46 shows the demographic characteristics of clients enrolled in ADAP in 2011. ADAP clients did not differ significantly from persons living with HIV/AIDS in the state in the proportion who were female, but there were minor differences in race, ethnicity, and age. There were higher proportions of Hispanic persons enrolled in ADAP (11%) compared to persons living with HIV/AIDS in the state (9%). There were also higher proportions of persons age 25-44 enrolled in ADAP (47%) compared to persons living with HIV/AIDS in the state (41%).

ADAP clients may receive *medication assistance* if they have no access to medical insurance with adequate prescription drug coverage. ADAP clients that have access to some form of medical insurance with adequate prescription coverage may receive services through the ADAP *insurance assistance* program. There were significant differences in race, ethnicity, and age utilization between the *medication* and *insurance assistance* programs. There were higher proportions of white, non-Hispanic persons using the insurance program (72%) compared to 64% using medication assistance. On the other hand, there were higher proportions of Hispanic persons using the medication assistance program (13%) as opposed to only 5% using the insurance assistance program.

Differences in utilization between age groups are noted in both the 25-44 and the 45-64 year ranges. Whereas 25-44 year olds only make up 37% of the insurance assistance program, they make up 53% of the medication assistance program. Alternatively, 45-64 year olds comprise 56% of the insurance assistance program and only 41% of the medication assistance program.

**Table 46**  
**Primary Demographic Characteristics of AIDS Drug Assistance Program Clients<sup>1</sup>**  
**2011**

<b>ADAP Program</b>						
	<b>Medication Assistance</b>		<b>Insurance Assistance</b>		<b>Whole<sup>1</sup> Program</b>	
<b>Race and Ethnicity</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
White, non-Hispanic	327	(64)	186	(72)	460	(67)
Black, non-Hispanic	103	(20)	49	(19)	128	(19)
Hispanic	65	(13)	13	(5)	73	(11)
Asian	13	(2)	9	(3)	20	(3)
Nat. Hawaiian/ Pac. Isl	1	--	0	--	1	--
Am. Indian/ Alaska Nat.	4	(1)	2	(1)	6	(1)
More than one race	1	--	0	--	1	--
Unknown race	0	--	0	--	0	--
<b>Sex</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
Male	400	(81)	203	(78)	543	(79)
Female	112	(19)	56	(22)	144	(21)
Transgender	2	--	--	--	2	--
<b>Age (yrs)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>	<b>#</b>	<b>(%)</b>
<2	0	--	0	--	0	--
2-12	1	--	0	--	1	--
13-24	27	(5)	7	(3)	14	(2)
25-44	272	(53)	96	(37)	321	(47)
45-64	208	(41)	145	(56)	339	(49)
65 and older	6	(1)	11	(4)	15	(2)
Unknown	0	--	0	--	0	--
<b>Totals</b>	<b>514</b>		<b>259</b>		<b>689</b>	

<sup>1</sup>Whole Program for ADAP includes both medication assistance and insurance assistance. Patients are unduplicated and may have utilized both the medication and insurance assistance programs in the report year.

The proportion of Hispanics enrolled in ADAP also differed from Part B and Part C programs. Eleven percent of those served by ADAP were Hispanic, compared to 9% of Part B support services clients (Table 44) and 7% of Part C clients (Table 47).

There were no significant differences between the proportion of black, non-Hispanic clients enrolled in ADAP and the proportion of black, non-Hispanic persons served through the Part B support services and Part C programs. The data is also consistent for the white, non-Hispanic clients served.

Lastly, though there were no significant differences between age distributions when comparing ADAP with Part B support services clients (Table 44) and Part C clients (Table 47), males utilized the AIDS Drug Assistance Program at a 3% higher rate than Part B support services.

## CHARACTERISTICS OF PART C EARLY INTERVENTION SERVICES CLIENTS

### Primary Demographic Characteristics

Primary demographic characteristics of Part C clients seen at the four Part C clinics in Iowa are shown in Table 47. As a group, Part C clients did not differ significantly from persons living with HIV/AIDS in the state on these basic demographic characteristics. However, there were differences among the clinics in the state.

**Table 47**  
**Primary Demographic Characteristics of Part C Early Intervention Services Clients<sup>1</sup>**  
**2011**

	Location of Provider									
	Sioux City <sup>2</sup>		Des Moines		Iowa City <sup>3</sup>		Davenport		Total	
Race and Ethnicity	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
White, non-Hispanic	80	(59)	217	(57)	391	(72)	215	(67)	903	(66)
Black, non-Hispanic	24	(18)	101	(27)	86	(16)	78	(24)	289	(21)
Hispanic	19	(14)	34	(9)	31	(6)	18	(6)	102	(7)
Asian	3	(2)	14	(4)	14	(3)	2	(1)	33	(2)
Nat. Hawaiian/ Pac. Isl	0	--	2	(1)	0	--	1	--	3	--
Am. Indian/ Alaska Nat.	4	(3)	1	--	2	--	2	(1)	9	(1)
More than one race	5	(4)	5	(1)	9	(2)	3	(1)	22	(2)
Unknown race	0	(1)	3	(1)	7	(1)	0	--	10	(1)
Sex	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Male	109	(81)	273	(72)	436	(81)	244	(76)	1,062	(77)
Female	26	(19)	98	(26)	103	(19)	75	(24)	302	(22)
Transgender	0	--	6	(2)	1	--	--	--	7	(1)
Age (yrs)	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
<2	0	--	0	--	0	--	0	--	0	--
2-12	2	(1)	0	--	0	--	0	--	2	--
13-24	4	(3)	17	(4)	24	(5)	11	(3)	56	(4)
25-44	59	(44)	198	(53)	228	(42)	124	(39)	609	(45)
45-64	64	(47)	152	(40)	277	(51)	167	(53)	660	(48)
65 and older	6	(5)	10	(3)	11	(2)	17	(5)	44	(3)
Unknown	0	--	0	--	0	--	0	--	0	--
<b>Totals</b>	<b>135</b>		<b>377</b>		<b>540</b>		<b>319</b>		<b>1,371</b>	

<sup>1</sup> Counts could not be unduplicated. Clients who received services at more than one Part C clinic will be counted more than once. All clients that utilized a service eligible for Part C funding are included.

<sup>2</sup> Siouxland Community Health Center in the Western region received both Part B and Part C funds. All services could not be separated by type of funding.

<sup>3</sup> University Iowa Hospital HIV Program in the Eastern region received both Part B and Part C funds. All services could not be separated by type of funding.

The four clinics differed in the proportions of black, non-Hispanic and Hispanic clients served (Table 47). In Des Moines, 27% of clients were black, compared to 24% in Davenport, 18% in

Sioux City, and 16% in Iowa City. In Sioux City, 14% of clients were Hispanic, compared to 9% in Des Moines, and 6% in both Iowa City, and Davenport.

### **Economic Indicators for Part C Clients**

Income level, living arrangement, and insurance status were also collected for Part C clients in 2011. As illustrated in Table 48, 5% of Part C clients were living in non-permanent housing in 2011. There were approximately 13% of Part C clients whose living arrangement was unknown. Sioux City had the highest proportions of clients who lived in non-permanent housing in 2011 at 13%. Only 1% of clients in Davenport were in non-permanent housing. Iowa City had the highest proportions of clients whose living status was unknown or unreported at 33%. This unknown or unreported status should be considered when making comparisons with other providers.

Forty-three percent of all Part C clients had an income equal to or less than the federal poverty level (FPL) in 2011. Iowa City reported the lowest proportion of clients with incomes equal to or less than the federal poverty level in 2011, with 32%; however, income level was unknown for 34% of their clients and this should be considered when making any comparisons to other Part C providers. Des Moines reported the highest proportion of clients with incomes equal to or less than the federal poverty level in 2011, with 54%.

The proportion of clients with private medical insurance varied between the clinics. Statewide, only 22% of clients had private medical insurance, although this ranged from 15% in Iowa City to 38% in Davenport. Thirty-seven percent of all Part C clients used public programs like Medicaid or Medicare, and 27% had no medical insurance. The clinic in Des Moines served the highest proportion of persons without any insurance coverage (53%). Twenty-two percent of clients statewide were on Medicaid and Iowa City had the largest percentage 31% of clients used Medicaid as their payer of medical services. Des Moines and Davenport had the least amount of clients on Medicaid at 14% as their payer of medical services. Iowa City had the highest proportion of unknown status of medical insurance at 33% and this should be considered when making comparisons with other Part C providers.

Compared to Part B service providers who had 23% of clients with no insurance, Part C providers had 27% of clients who didn't have insurance. Compared to Part C providers with 22% of clients who used Medicaid to pay for their health services, Part B service providers had more clients that use Medicaid at 28%.

**Table 48**  
**Economic Indicators for Part C Clients<sup>1</sup> by Provider**  
**2011**

	Location of Provider									
	Sioux City <sup>2</sup>		Des Moines		Iowa City <sup>3</sup>		Davenport		Total	
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
<b>Living Arrangements</b>										
Permanent Housing	116	(86)	352	(93)	336	(62)	315	(99)	1,119	(82)
Non-permanent Housing	18	(13)	19	(5)	24	(5)	4	(1)	65	(5)
Institution	1	(1)	4	(1)	1	--	0	--	6	--
Other	0	--	0	--	1	--	0	--	1	--
Unknown	0	--	2	(1)	178	(33)	0	--	180	(13)
<b>Income</b>										
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Equal to or below FPL <sup>4</sup>	64	(47)	202	(54)	172	(32)	145	(45)	583	(43)
101-200% FPL	37	(27)	106	(28)	125	(23)	74	(23)	342	(25)
201-300% FPL	25	(19)	36	(10)	49	(9)	16	(5)	126	(9)
> 300% FPL	9	(7)	24	(6)	10	(2)	31	(10)	74	(5)
Unknown	0	--	9	(2)	184	(34)	53	(17)	246	(18)
<b>Medical Insurance</b>										
	#	(%)	#	(%)	#	(%)	#	(%)	#	(%)
Private	37	(27)	68	(18)	81	(15)	121	(38)	307	(22)
Medicare	16	(12)	58	(15)	75	(14)	55	(17)	204	(15)
Medicaid	29	(22)	51	(14)	169	(31)	45	(14)	294	(22)
Other Public	0	--	0	--	7	(1)	1	--	8	(1)
No Insurance	50	(37)	199	(53)	30	(6)	97	(31)	376	(27)
Other	3	(2)	0	--	1	--	0	--	4	--
Unknown	0	--	1	--	177	(33)	0	--	178	(13)
<b>Totals</b>	<b>135</b>		<b>377</b>		<b>540</b>		<b>319</b>		<b>1,371</b>	

<sup>1</sup> Counts could not be unduplicated. Clients who received services at more than one Part C clinic will be counted more than once. All clients that utilized a service eligible for Part C funding are included (not just clients that met Part C guidelines for eligibility).

<sup>2</sup> Siouxland Community Health Center, in the Western region, received both Part B and Part C funds. Client counts could not be unduplicated.

<sup>3</sup> University Iowa Hospital HIV Program, in the Eastern region received both Part B and Part C funds. Client counts could not be unduplicated.

<sup>4</sup> FPL = Federal Poverty Level (\$10,890 Annually)

## Question 2

**What are the patterns of utilization of HIV services by persons with HIV in Iowa?**

### UTILIZATION OF RYAN WHITE PART B SUPPORT SERVICES

Utilization of Ryan White Part B support services is shown for each region in Table 49.

Medical-case management was the most heavily utilized service in 2011. Eighty-one percent of clients accessed this service at least once. Clients averaged over 10 visits for Medical-case management in 2011, but the number of visits varied greatly by region. Clients in the Western Region averaged 13 visits while clients in the Eastern Regions averaged 8 visits. Clients in the Central Region averaged 15 visits per client, which is the highest of the three regions. This may indicate differences in utilization, but could also reflect differences between the regions in what constitutes a case management 'visit'.

The other most utilized services included outpatient medical care, transportation services, non-medical case management, and oral health care. It should be considered that outpatient medical care as the most utilized services for Part B may be due to clients in the Western region (Siouxland Community Health Center) and clients in the Eastern region (University of Iowa) not be unduplicated from the Part C Services. (See footnote under Table 49)

The least utilized Part B services were mental health, emergency financial services, and substance abuse.

**Table 49**  
**Utilization of Ryan White Part B Services<sup>1</sup> by Region**  
**2011**

Service	Region						# clients	Total Visits per client
	# clients	Western Visits per client <sup>3</sup>	# clients	Central Visits per client	# clients	Eastern Visits per client		
Medical-case management services	169	12.67	408	15.2	415	11.48	992	13.21
Non-medical case management services	0	*	178	*	55	*	233	*
Emergency financial assist.	10	*	0	*	67	*	77	*
Transportation services	58	*	51	*	102	*	211	*
Outpatient medical care	3	1.3	0	N/A	19	2.88	22	2.48
Oral health care	8	1.0	14	1.2	6	1.66	28	1.24
Mental health services	22	5.04	59	8.8	4	5.0	85	7.65
Substance Abuse services	0	N/A	0	N/A	0	0	0	N/A
<b>Total Clients</b>	<b>174</b>		<b>492</b>		<b>444</b>		<b>1110</b>	

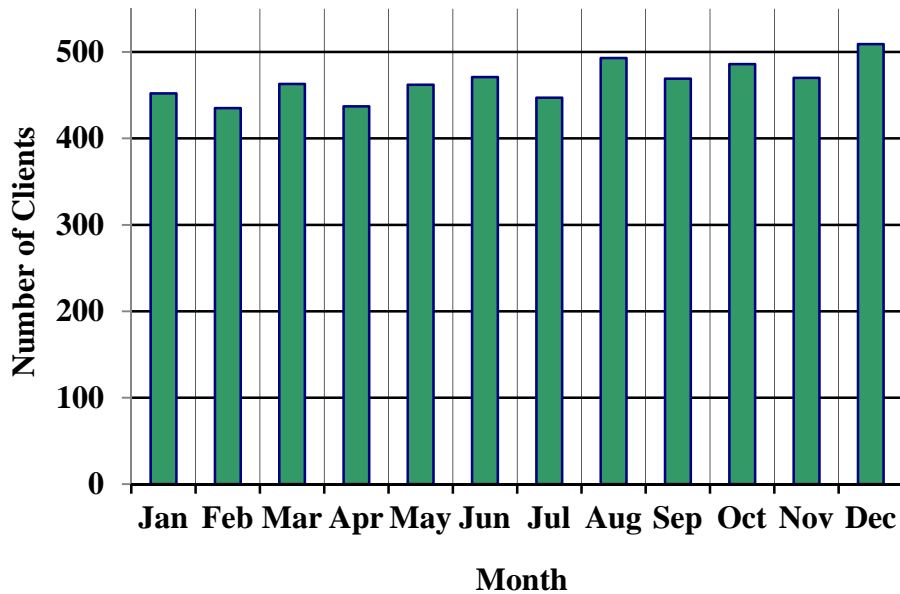
<sup>1</sup> Counts could not be unduplicated. Clients who received services in more than one region will be counted more than once.

\* Visits per client were not reported.

## UTILIZATION OF AIDS DRUG ASSISTANCE PROGRAM

In 2011, 744 individuals were enrolled in the ADAP, with an average of 479 individuals receiving either medication assistance or insurance assistance per month. December 2011 had the highest utilization at 509 clients, and February 2011 had the least number of individuals supported at 435 (Figure 60). Since 2004, the average monthly utilization of ADAP has grown from 186 individuals to 479 individuals, a 158% increase.

**Figure 60**  
**ADAP Utilization for Whole Program**  
**2011**





## UTILIZATION OF PART C EARLY INTERVENTION SERVICES

Services provided by Part C clinics are shown in Table 50. Outpatient medical care was the most heavily utilized service in 2011. Of the 1,371 clients served in 2011, 96% received outpatient medical care. Medical case management was the second most utilized service at 61%.

Other frequently utilized services included treatment adherence counseling, oral health care, and medical transportation services. No service, other than outpatient medical care, was used by more than 43% of the clients. All four Part C clinics provided outpatient medical care, mental health services, and oral health care.

**Table 50**  
**Utilization of Ryan White Part C Services<sup>1</sup> by Provider**  
**2011**

Service	Sioux City <sup>2</sup>		Des Moines		Iowa City <sup>3</sup>		Davenport		Total	
	# clients	Visits per client <sup>4</sup>	# clients	Visits per client <sup>4</sup>	# clients	Visits per client <sup>4</sup>	# clients	Visits per client <sup>4</sup>	# clients	Visits per client <sup>4</sup>
Outpatient medical care	125	4.7	349	4.2	530	2.9	318	3.06	1,322	3.45
Oral health care	53	3.2	83	3.4	95	1.9	11	2.36	238	2.74
Mental health services	38	7.3	10	3.9	27	2.0	24	1.75	135	3.05
Medical nutrition therapy	1	1.0	7	1.4	2	1.0	0	*	10	1.28
Medical case management	135	12.9	374	16.4	327	5.2	0	*	836	11.45
Outpatient substance abuse services	0	*	0	*	1	1.0	0	*	1	1.0
Case management (non-medical)	0	*	0	*	12	*	0	*	12	*
Emergency financial assistance	7	*	0	*	0	*	0	*	7	*
Health ed./ risk reduction	53	*	0	*	46	*	0	*	99	*
Housing services	0	*	0	*	0	*	0	*	0	*
Legal services	0	*	0	*	0	*	0	*	0	*
Linguistics services	12	*	12	*	0	*	0	*	24	*
Medical transportation services	31	*	65	*	36	*	0	*	132	*
Psychosocial support services	0	*	0	*	0	*	0	*	0	*
Referral for health care/ supportive services	0	*	84	*	3	*	0	*	87	*
Rehabilitation services	0	*	0	*	0	*	0	*	0	*
Treatment adherence counseling	62	*	140	*	84	*	0	*	286	*
<b>Total Clients</b>	<b>135</b>		<b>377</b>		<b>540</b>		<b>319</b>		<b>1,371</b>	

<sup>1</sup> Counts could not be unduplicated. Clients who received services at more than one Part C clinic will be counted more than once. All clients that utilized a service eligible for Part C funding are included.

<sup>2</sup> Siouxland Community Health Center, in the Western region, received both Part B and Part C funds. Client counts could not be unduplicated.

<sup>3</sup> University Iowa Hospital HIV Program, in the Eastern region received both Part B and Part C funds. Client counts could not be unduplicated.

<sup>4</sup> Visits per client were only reported for certain categories.

\* Visits per client were not reported.

NA means that these data were not reported by certain providers.

Since 2008, each Part C provider has seen a significant increase in the number of clients who received a service. Davenport and Iowa City saw 10% and 15% increases respectively, Des Moines had a 29% increase, while Sioux City saw a 32% increase.

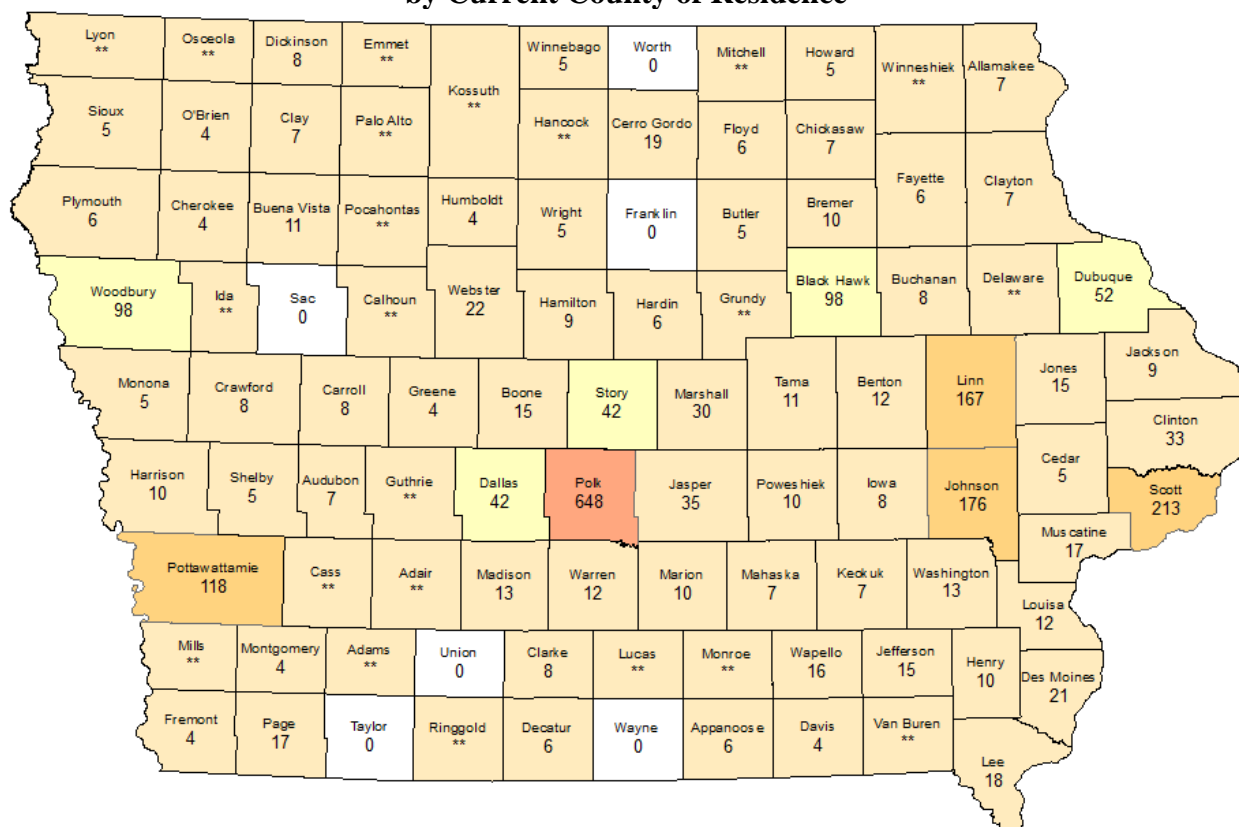
## Question 3

**What are the number and characteristics of persons who know they are HIV positive, but who are not receiving HIV primary medical care?**

This section presents information about Iowa's efforts to measure unmet need for HIV primary medical care among persons who are HIV positive. Figure 61 and Table 51 below are being presented for 2010. For this analysis, all persons who were living with HIV or AIDS in Iowa were included, not just those diagnosed in the state.

Figure 60 shows the number of persons living with HIV or AIDS in Iowa by last known county of residence as of December 31, 2010. There were 2,326 persons living with HIV or AIDS in Iowa on December 31, 2010, regardless of their states of residence at time of initial diagnosis. Persons who were initially diagnosed as Iowa residents but who were known not to be residing in Iowa in 2010 have been removed from this analysis.

**Figure 61**  
**All Persons Living with HIV/AIDS in Iowa on December 31, 2010**  
**Regardless of State of Diagnosis**  
**by Current County of Residence**



## Measuring Unmet Need for HIV Primary Medical Care by Using Laboratory Data

Measuring unmet need for HIV primary medical care involves quantifying the number of individuals who know that they are HIV positive, but are not receiving HIV-related care. It is intended to reflect how quickly people get into care after testing positive for HIV and whether they continue that care. The CARE act requires grantees to carry out needs assessments focusing on people living with HIV who are not receiving care, to estimate the number of people who are HIV positive but not in care, to learn the characteristics of this population, to assess their service needs, and to determine how to address those needs.

Surveillance data can be used to assess unmet need for HIV primary medical care. Persons in care are defined as any HIV-positive person who has had at least one viral load or CD4+ cell count in a given 12 months. This requires complete reporting of all viral loads and CD4+ cell counts, as well as an ability to estimate the completeness of reporting and cooperation of medical providers in the state. By law, all results of all CD4+ and viral load tests must be reported to the IDPH HIV Surveillance Program. Evaluations using SAS programs developed by CDC show 99% completeness of reporting.

Of the 2,326 people reported to be diagnosed with HIV or AIDS as of September 30, 2010, and living in Iowa as of December 31, 2010, 749 (or 32%) had no evidence of HIV primary medical care in 2011 (Table 51). That is to say, those persons deemed to be out of care had no reported CD4+ or HIV viral load test results during the 2011 calendar year. The denominator includes all persons known to be living with HIV disease in Iowa, regardless of their residence at initial diagnosis of HIV or AIDS.

No statistical adjustment is made for out-migration. Routine interstate duplicate review (RIDR), a process through which the Centers for Disease Control and Prevention (CDC) facilitates the reconciliation of potential duplicate cases between state surveillance programs, allows for regular removal of cases from HIV/AIDS Reporting System (eHARS) when they are later reported in other states. Nevertheless, persons with HIV who move away from the state may appear to be out of care unless or until they enter care in another state and that state contacts the surveillance program for information. Therefore, the number of persons out of care may be overestimated.

## Results of Unmet Need for HIV Primary Medical Care Analysis

Table 51 presents a statistical analysis of the characteristics and status of care of persons living in Iowa who were diagnosed with HIV disease as of September 30, 2010, and alive through December 31, 2010. These results suggest that among the group of individuals reviewed, persons *out of care* were more likely to have HIV (non-AIDS), be members of a racial minority, have been born outside the U.S., reside in rural counties, or have lived longer since having been diagnosed with HIV. Because those out of care are more likely to have HIV diagnoses than AIDS diagnoses and yet have been diagnosed for eleven years or more, these data suggest either that people are not getting linked into care immediately after diagnosis or that they leave care soon after their diagnoses. Other data (not presented here) show that the linkage rate in Iowa is very high – 92% of people are linked to medical care within three months. This indicates that people are leaving care after the initial linkage.

**Table 51. Characteristics and Status of Care of Persons Living in Iowa who were Diagnosed with HIV Disease as of September 30, 2010, and Alive through December 31, 2010**

	PLWHA <sup>1</sup> Total = 2,326 No. (Row %)	In Care <sup>1</sup> Total = 1,577 No. (Row %)	Out of Care <sup>1</sup> Total = 749 No. (Row %)	Odds <sup>1</sup> Ratio	p-value <sup>1</sup>	95% Confidence Interval <sup>1</sup>
<b>Diagnostic Status</b>						
HIV	920 (100)	589 (64)	331 (36)	<b>1.33</b>	0.0016	1.11, 1.58
AIDS	1,406 (100)	988 (70)	418 (30)			
<b>Sex at Birth</b>						
Male	1,855 (100)	1,260 (68)	595 (32)			
Female	471 (100)	317 (67)	154 (33)	1.03	0.7968	0.83, 1.28
<b>Race/Ethnicity</b>					<0.0001*	
White, Non-Hispanic	1,561 (100)	1,128 (72)	433 (28)			
Black, Non-Hispanic	488 (100)	285 (58)	203 (42)	<b>1.86</b>	<0.0001	1.50, 2.29
Hispanic	186 (100)	101 (54)	85 (46)	<b>2.19</b>	<0.0001	1.61, 2.98
Asian, Non-Hispanic	32 (100)	25 (78)	7 (22)	0.73	0.4645	0.31, 0.70
Multi-race, Non-Hisp.	46 (100)	33 (72)	13 (28)	1.02	0.9379	0.54, 1.97
Other, Non-Hispanic	13 (100)	5 (38)	8 (62)	4.17	0.0069	1.38, 12.81
<b>Mode of Exposure</b>					<0.0001*	
MSM	1,149 (100)	810 (70)	339 (30)			
IDU	250 (100)	161 (64)	89 (36)	1.32	0.0580	0.99, 1.76
MSM/IDU	225 (100)	132 (59)	93 (41)	<b>1.68</b>	0.0005	1.06, 2.26
Heterosexual	392 (100)	279 (71)	113 (29)	0.97	0.7992	0.75, 1.25
NIR	270 (100)	168 (62)	102 (38)	1.45	0.0084	1.10, 1.91
Pediatric	18 (100)	15 (83)	3 (17)	0.48	0.2455	0.14, 1.66
Other	22 (100)	12 (55)	10 (45)	1.99	0.1117	0.85, 4.65
<b>Birth Country</b>						
U.S.	2,015 (100)	1,404 (70)	611 (30)			
Other	311 (100)	173 (56)	138 (44)	<b>1.83</b>	<0.0001	1.44, 2.34
<b>County of Residence<sup>1</sup></b>						
Urban	1,441 (100)	998 (69)	443 (31)			
Rural	885 (100)	579 (65)	306 (35)	<b>1.19</b>	0.0548	1.00, 1.42
<b>SELECTED SUMMARY STATISTICS</b>						
	PLWHA Total = 2,326	In Care Total = 1,577	Out of Care Total = 749		p-value	
<b>Years HIV Positive</b>	Mean = 9.9 SD = 6.5 Median = 9.0 Range: 0 to 28	Mean = 9.3 SD = 6.5 Median = 9.0 Range: 0 to 28	Mean = 11.1 SD = 6.3 Median = 11.0 Range: 0 to 27		<0.0001**	
<b>Current Age (n=2,312)<sup>1</sup></b>	Mean = 45.1 SD = 11.0 Median = 46.0	Mean = 45.3 SD = 11.1 Median = 46.0	Mean=44.8 SD=10.9 Median=45.0		0.1373**	

<sup>1</sup>See next page for explanatory notes for Table 51.

**Notes for Table 51:**

**PLWHA:** persons living with HIV or AIDS with current residence in Iowa.

**In Care:** any person with a value of CD4 count, CD4 percent, or HIV viral load reported during 2011.

**Out of Care:** any person without a value of CD4 count, CD4 percent, or HIV viral load reported during 2011.

**Odds ratio:** way of comparing whether the odds of a certain event are the same for a comparison group as for a baseline group. In this case, an odds ratio greater than one implies that the odds of being out of care are greater in the comparison group than in the baseline group (in the table, the ones with no odds ratio shown are the comparison groups). For example, the odds ratio for the group of persons whose birth country was other than the U.S. is calculated to be 1.83. This is interpreted to mean that foreign-born persons (the comparison group) are 1.83 times more likely to be out of care than persons born in the U.S. (the baseline group).

**P-values:** reflect chi-square results for general association across all strata shown for a particular variable. Represent the probabilities that the observed care differences happened purely by chance.

**\*P-values for Race/Ethnicity and Mode of Exposure groups:** represent the probability that care differences among all strata in the groups happened purely by chance.

**\*\*P-values for continuous variables (Current Age and Years HIV Positive):** reflect Wilcoxon-Mann-Whitney results for comparison of distribution medians.

**95% Confidence Intervals:** interpreted to mean there is a 95% certainty that the “true” value of a particular odds ratio falls within the calculated limits of the confidence interval.

**SD:** standard deviation from the mean

**Current Age:** age at time of this analysis. As of the time of this analysis, fourteen of the 2,326 persons alive as of December 31, 2010 had died, resulting in n=2,312 for the Current Age variable.

**Urban versus rural classification:** pools the top ten most populous Iowa counties in the urban category and all other counties in the rural group.

**Multivariate logistic regression model:** gives estimates as shown in table 2, with each estimate adjusted for all other variables in the model. These results suggest that, among the group of individuals reviewed, persons *out of care* were more likely to have HIV (non-AIDS), be members of a racial minority, have been born outside the U.S., reside in rural counties, or have lived longer since having been diagnosed with HIV.